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ADDRESSES AND ORIGINAL ARTICLES

BILIOUS MIGRAINE

ITS TREATMENT WITH BILE SALT PREPARATIONS

BY THOMAS C. HUNT, D.M. OXF., M.R.C.P. LOND.
PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL, LONDON; LATE MACKENZIE-MACKINNON RESEARCH FELLOW

THE belief that migraine was caused by a "superfluity of bilious humour," by a "hot distemper of the liver," or by "black bile" goes back to very ancient days. Most older writers regarded the sick headache either as a "complication of dyspepsia" or as an expression of a primary biliary disorder. Fothergill, in 1784, gave the weight of his authority to the view that migraine arose from inattention to diet, particularly in the form of melted butter, fat meats, pepper, or strong liquors. Thomas Watson, in 1857, also supported the view that the cause of bilious headache was digestive. Liveing, on the other hand, in his admirable account of megrim, written in 1873, after discussing the history of the "doctrine of biliousness," gave no support whatever to a biliary origin of sick headache. Of recent years attention has been directed again, notably by French and American authors, to the rôle of the liver and gall-bladder in migraine.

Stasis in the *gall-bladder* has been put forward as the origin of certain migraines by Chiray and Triboulet, Lomon, and Vallery-Radot and Blamoutier. Friedlander and Haug and Wohrmann emphasise stasis in the biliary passages, mainly due to dyskinesia of the gall-bladder, as a cause of migraine. Gaston Lyon also regards cholecystatony as one cause of migraine—to mention only a few of the supporters of this conception.

Evidence pointing to some *hepatic* dysfunction as the underlying cause of migraine has been brought forward by McClure and Huntsinger, who claimed to have demonstrated some liver functional disturbance in 90 per cent. of 72 patients examined. Diamond also recorded 32 of 35 migraine patients as having abnormal amounts of bilirubin in the blood, which he regarded as a latent icterus due to liver function disorder; the changes he reports are however very small.

Nearly all authorities agree that migraine may be of varying types, and that probably different exciting causes may be at work in these different types. The bilious type is one which is especially characterised by profuse and intense vomiting, and in which other symptoms, such as headache and ocular manifestations, are less marked or even absent. In some, abdominal pain or discomfort may also be present. Critchley and Ferguson agree that many of these "important and common cases are intimately associated with hepatic dysfunction."

The Present Inquiry

The series of cases on which this paper is based have been studied: firstly, with the object of determining to what extent a bilious type may be distinguished from other types of migraine; secondly, how far, in such bilious cases, any disorder of liver or gall-bladder can be demonstrated, and whether such disorder, when found, is to be regarded as a primary cause of the attacks or as a secondary result of them; and, finally, to what extent treatment directed towards the correction of such disorder may be expected to influence the frequency or severity of the migraine attacks.

For the purposes of this investigation I have regarded migraine as a symptom-complex, showing certain well-defined characteristics. Many cases in which reasonable doubt of the clinical diagnosis existed—irrespective of the possible cause—have been excluded. The main features on which I have relied have been the following: a familial tendency, auræ, periodicity, freedom between attacks, headache and vomiting, though all these characteristics have not necessarily been present in every case. For various reasons 34 of the original series of 100 cases have been excluded. The remaining 60 (6 being separately discussed) which are analysed in this paper have all been patients in whom the condition could with justification be diagnosed as migraine. The distinction of "symptomatic" migraine from "idiopathic" migraine was only possible in a few cases, but the former have been excluded except in 2 cases, mentioned later in detail.

ANALYSIS OF THE CASES

Of the 60 patients, 43 were female and 17 male. In 30, or exactly 50 per cent., the onset of attacks was before the age of 14; in 17, between 14 and 21; and in 13 only over 21 years of age. Ocular phenomena in the form of flashes, fortification spectra, silver specks, dimness of vision, or temporary blindness were noted in 22, or 36·6 per cent. Premonitory nervous symptoms such as paræsthesias, weakness, aphasia, or vertigo were observed in 10. An aura of extreme drowsiness was recorded in 7, of whom 4 had marked and persistent yawning for hours before the attack. In 5 of these patients intense anorexia was also present, but in 3 others insatiable hunger was the warning symptom, and in 2 of these a craving for sugar or sweet things always occurred. A definite familial incidence in parents or close relatives was elicited in 36—i.e., 60 per cent. Chronic constipation was noted in 12 only, of whom 9 noticed that this was worse just before an attack.

Diet.—A dislike of and inability to take fatty food was noted in 11, but tea, eggs, and milky food were blamed for provoking attacks by 5 other patients. In 44 no obvious dietetic factor had been found by the patient or could be elicited on questioning. In 13 cases there was a history of jaundice, and 40 were of the nervous, anxious, excitable type, but 20 could fairly be described as calm and phlegmatic.

Predisposing and exciting factors.—Twenty-one patients stated that their attacks were particularly brought on by anxiety or excitement; 5 of them dated the beginning of their migraine from a severe mental shock, such as a bereavement. In 32 the blood pressures between attacks were below the normal average, but in 6 there was some associated hypertension with the migraine.

Headache was present in all but 5 cases—i.e., 55. It was bilateral from the beginning in 30, the site being mainly frontal in the majority but occipital in 6. It was unilateral at the start in 25 patients, beginning on the right side in 15, on the left in 7, and in 3 on either side indifferently.

Vomiting.—In 23 cases vomiting was severe, and in 17 moderately so. Six patients had only occasional vomiting, 10 suffered from nausea and retching without vomiting, and in 4 cases only was there neither nausea nor vomiting. Thus in 40 patients, or 66 per cent., vomiting could be regarded as a prominent feature, and in only 4, or 6·6 per cent.,

were there no "bilious" symptoms at all. Of the 40 patients who had vomiting, relief followed this fairly rapidly in 30, whilst in 10 no appreciable relief seemed to be produced.

These figures compare very closely with Liveing's original series of his own and collected cases, in which 3 of 54 patients had no vomiting (5·5 per cent.), 8 had nausea only, and 43 had vomiting (79 per cent.). In his cases he also noted that the headache was bilateral in 65 per cent., and that 60 per cent. had an onset in childhood. The high percentage of those patients having marked vomiting in the attacks makes this so important a characteristic of migraine that if a special bilious type, with any different causation from other types, is to be fairly delineated, it would appear to constitute the majority of all cases.

There is no definite relationship in this series between the severity of vomiting and the presence of visual symptoms or the intensity of the headache. All those 7 patients, however, who had an initial sensation of drowsiness also suffered from severe vomiting, as did those who noticed a marked premonitory change in appetite.

BILIARY DRAINAGE

Thirty patients were selected in whom the vomiting was particularly severe. All showed the typical clinical characteristics of migraine. These patients were examined between attacks by the method, originated by Meltzer and Lyon, of duodenal catheterisation and biliary drainage. In many cases the investigation was carried out on two, and in a few cases on three, occasions. In 3 patients the position of the tube in the duodenum was doubtful and these had to be omitted, so that 27 successful cases remain to be considered.

Passage of the tube through the pylorus at the beginning of an attack in several patients was unsuccessful, as there appeared to be a considerable pyloric spasm, together with gastric hypersecretion. The small Ryle's tube was used, and the position of its end in the first or second part of the duodenum was verified by radiography in many of the cases. In others the correct position was assumed by the recovery of a few cubic centimetres of clear duodenal bile, the absence of gastric mucus or acid, and the fact that a few syringefuls of warm water injected down the tube could not be recovered, as they almost always can be when the end of the tube lies in the stomach. With sufficient experience it is almost always possible by such means to be sure that the end of the tube has passed through the pylorus. In all cases the form of biliary stimulus used was 50 c.cm. of warm 33 per cent. magnesium sulphate solution, which represents about four drachms of the salt. Particular care was taken to avoid psychological factors in the carrying-out of the test; in all cases the magnesium sulphate was injected slowly at body temperature through the tube and the patient was not aware that any other fluid than water was being used.

Of these 27 patients subjected to biliary drainage, in 6 no concentrated B bile* could be obtained at all, and in 6 vomiting occurred at the onset, during or just after the flow. In 4 of these 6 patients the vomiting was preceded by the typical train of symptoms, which the patients described as "exactly like their usual attacks." In 1 case characteristic hyperæsthesia of the right side of the scalp and fortification figures occurred; in the remaining 3 the one-sided headache, with ocular phenomena in 2. In 7 patients, one of whom vomited subsequently, only a small volume of intensely concentrated bile, almost black in colour and of very viscid nature, was obtained. In the remaining 8 patients a normal volume of 25 to 50 c.cm. of B bile was withdrawn, of normal concentration in 3, and of poor concentration in 4.

The time of onset of the flow of bile after the injection of the stimulus varied between one and twenty-five minutes, the average length of time being exactly six minutes. The duration of the biliary flow was also variable, the average of those in whom vomiting did not occur being thirty minutes. These averages compare very closely with those which I have found for the normal subject. The bile was examined microscopically, chemically, and in some cases bacteriologically. The microscopical and bacteriological examinations will not be discussed, as they are of less interest in this connexion.

Chemically the bile was tested for urobilinogen at once by the addition of Ehrlich's aldehyde reagent, and an empirical standard was taken representing the time at which the red colour developed and its intensity. Albumin was estimated by the very rough method of Esbach's albuminometer, the bile being first acidified with acetic acid. Examination of the bile by these methods showed, in the seven cases giving the highly concentrated, almost black bile, a great excess of urobilinogen and a definite increase in albumin. Two others showed some excess of albumin and three a moderate increase in the amount of urobilinogen. In four, traces only of urobilinogen were noted, and in two no colour change was seen at all. In one case, on the addition of Ehrlich's aldehyde reagent, an unusual brilliant canary yellow colour appeared which was not seen in any other case and the significance of which I am not able to explain.

CHOLECYSTOGRAPHY

For various reasons it was not possible to radiograph all these patients, but in 18 cases X ray examination of the gall-bladder was carried out before and after administration of sodium tetraiodophenolphthalein. After control examination the dye was given by mouth in the form of Shadocol, and films were taken 12, 15, and 17 hours later, and again two hours after a large fatty meal of butter and eggs. There is now abundant evidence that with careful technique by the oral method a poor or absent shadow of the gall-bladder is in a very high proportion of cases indicative of some disorder of the liver, bile-ducts, or gall-bladder. Even when absorption of the dye might appear to be deficient, as when the patient vomits, there is normally little failure in visualisation of the gall-bladder unless the vomiting takes place within an hour of the shadocol administration. In none of these cases was there early vomiting or evidence suggesting failure of dye absorption.

Of these 18 patients only 9 showed a good gall-bladder shadow of normal density with normal rate of concentration and emptying after the fatty meal. Four showed an abnormally poor shadow with delayed concentration and emptying; 4 a shadow so faint as to be only just detectable; and 1 no shadow at all. In those 9 patients showing a normal gall-bladder shadow, concentrated B bile was obtained by biliary drainage in all but one, who vomited as the flow was in progress. Two of those showing an abnormally faint shadow gave a dark concentrated bile; in 4 very small amounts only of pale bile were obtained. The results, therefore, of the two methods of investigation agree in the respect that a good dye shadow was found with the recovery of B bile by drainage, and a deficient or absent shadow usually occurred with failure to obtain B bile, though the latter was not consistently the case.

The finding of a faint shadow by cholecystography

* B bile is that portion of the bile which appears during drainage after an initial flow of pale A (or bile-duct) bile; it is darker in colour and is generally regarded as being derived from the gall-bladder, although there is some controversy on this point.

in association with the withdrawal of dark concentrated B bile by duodenal drainage is, in my experience, very suggestive of liver deficiency, and I have noted this in a number of cases of cirrhosis of the liver.

Discussion

The results in the 27 patients examined by biliary drainage and cholecystography showed some variation from findings in the normal subject in 19 cases (or 70 per cent.) by biliary drainage, and by radiological examination in 9 of 18 cases (or 50 per cent.). The nature of these deviations from the normal were variable.

(1) The appearance in 4 patients of a characteristic migraine attack during the biliary flow suggests that some hepatic or gall-bladder action was able in these patients to act as an exciting cause of migraine. A psychological cause could not, of course, be definitely excluded though, as mentioned previously, the technique employed excluded it as far as possible. In one of these cases the magnesium sulphate was injected while the patient was asleep.

In order, however, to test whether the attack was in fact associated with the actual discharge of bile, the test was repeated in these 4 and 2 other patients, except that the same amount of magnesium sulphate was injected through the tube into the stomach. In none of these did symptoms resembling a migraine attack occur, though in one patient vomiting without associated symptoms did take place.

(2) In 7 patients the findings pointed to a condition of stasis in the gall-bladder, with increased concentration of bile.

(3) In 7 the results of biliary drainage and cholecystography were consistent with a defective gall-bladder concentrating power, such as might be produced by chronic cholecystitis. They could not, however, exclude a hepatic cause. If the evidence from both these tests is presumed to implicate the gall-bladder as apart from any hepatic cause, it shows that in 10 cases out of 27 some gall-bladder disorder other than mere stasis was present (Cases 8 to 17).

THE GALL-BLADDER

In order to try to determine whether such gall-bladder disorder might be the cause and not the result of migraine, I have investigated 6 patients (not included above) who suffered from undoubted migraine, and from whom the gall-bladder was removed. Short protocols of these patients (Cases 1 to 6) are given below. In all these patients definite organic disease of the gall-bladder was found. In 5 no change in the frequency or severity of the migraine attacks resulted, and in 1 only (Case 4) has there been relief from attacks after operation, though this patient has only been under observation for four months since the removal of the gall-bladder. (In one patient (Case 7) a condition of duodenal obstruction from adhesions was relieved at the time of cholecystectomy, and there have been no further attacks of migraine since. This patient was the only one in whom a purely local organic lesion could be definitely shown to be causative of attacks which were clinically characteristic of migraine; in these attacks there was no abdominal pain suggesting duodenal obstruction, but there was unilateral headache and profuse biliary vomiting with complete freedom between attacks.)

Kehr, in 1901, noted that subjects of gall-stones often have migraine, which, he stated, disappeared when the calculi were removed by operation. McClure and Huntsinger, however, record six cases, in none of which were migraine attacks relieved by removal of the gall-bladder for definite organic disease. In the patients here described it is noteworthy that symptoms of dyspepsia had become grafted on to pre-existing migraine attacks, which had occurred for many years previously without any indigestion. This fact, together with the unsuccessful results of cholecystectomy in relieving the migraine attacks, points unmistakably to the view that gall-bladder disease is a secondary result of migraine and not a cause of it. The gall-bladder stasis which was found in 7 of the patients examined may also be regarded in the same light.

It seems probable, therefore, that disorder of gall-bladder function and the formation of gall-stones may be brought about by recurrent migraine attacks predisposed to by a common hepatic or constitutional tendency in migraine subjects. It has been estimated that some 25 per cent. of the population suffer from migraine in various degrees, and that approximately 10 per cent. have some affection of the gall-bladder with or without stones. It is thus likely that some 2·5 per cent. of migraine subjects will by coincidence have associated gall-bladder disease independent of the migraine altogether. Of these 27 selected patients of the bilious type, the evidence points to 10, or 40 per cent., having such biliary disease, not including those 7 in whom stasis in the gall-bladder appeared to exist. It is thus justifiable to conclude that the frequency of the two conditions together is higher than can be accounted for by mere coincidence of two common disorders.

I conclude that local disorder or disease of the gall-bladder is not a cause of migraine but a result of it. It appears possible that an initial stasis of bile in the gall-bladder due to the migraine may lead to secondary stone formation and chronic cholecystitis. If this is indeed the sequence of events it is further evidence in favour of the view, originally put forward by Naunyn, that biliary stasis is at least one important factor in the causation of gall-stones. Further, if the bilious type be regarded as forming approximately half the cases of migraine, some 35 per cent. of all migraine patients might be expected to develop some disorder of the biliary tract. It is certainly of importance and interest to note how considerable a proportion of patients of later life, suffering from gall-stones or cholecystitis, give a history on careful questioning of typical migraine in earlier life and in their family.

THE LIVER

It is possible that a primary hepatic disorder may in some cases have caused the changes found by biliary drainage and radiography. In this case both gall-bladder stasis and gall-stone formation might be secondary to such liver dysfunction. If this were so, a hepatic cause might be the actual cause of the migraine attacks. It is significant that in two patients after cholecystectomy, biliary drainage led to characteristic migraine attacks similar to those the patients usually had. It is certain that magnesium sulphate injected into the duodenum leads to stimulation of the liver as well as to emptying of the gall-bladder (Leischner and others).

The problem of liver function in migraine is, however, a particularly difficult one. In two cases only did the findings on biliary drainage resemble those I have observed in some cases of cirrhosis of the liver, but I have also noted that even in the presence of gross hepatic disease this test may show no abnormality. Similarly, I have carried out the lævulose-tolerance test (Table I.) in six cases of migraine (between attacks) and found indefinite evidence of disorder in one only. It will be seen that in one case (No. 5) only was the rise in blood-sugar greater than 25 mg., which may be taken

as the lowest figure suggesting hepatic deficiency. It is not to be expected that such a test as this would demonstrate slight degrees of liver dysfunction, particularly during the period between migraine attacks.

TABLE I.—*Lævulose-tolerance Test in Migraine*

(40 g. lævulose by mouth)

Case	Age.	Sex.	Fasting blood-sugar. Per cent.	Blood-sugar: time after administration of lævulose.		Max. change.
				1 hour.	2 hours.	
1	52	F.	0·090	0·100	0·089	10 mg.
2	27	F.	0·100	0·100	0·105	0 ,,
3	41	F.	0·085	0·090	0·090	0 ,,
4	29	F.	0·110	0·120	0·120	10 ,,
5	38	F.	0·075	0·110	0·090	35 ,,
6	51	M.	0·095	0·100	0·105	0 ,,

It is, moreover, probable that if indeed some primary hepatic dysfunction is at the root of certain migraine attacks and the subsequent development of gall-bladder disease or gall-stones, any biliary or pigmentary changes we may detect are merely indications of some concomitant change in another at present unknown respect. In this connexion I am investigating the cholesterol in the blood during and between attacks of migraine, and hope to publish these results at a later date.

Treatment

If, however, as these investigations suggest, migraine attacks can be caused by local action through the biliary mechanism, and if disease or dysfunction of the gall-bladder be regarded as secondary to such attacks and not as causative, it seems worth while to study the effect of treatment directed towards influencing liver function. For this purpose I have utilised preparations of bile salts given by mouth. I have noted that a bile salt solution given intravenously causes an increased flow of pale liver or bile-duct bile, but does not frequently cause the gall-bladder to empty its concentrated B bile. Its action is thus at least as much a stimulant one upon the liver as upon the gall-bladder.

It is further possible that if some metabolic dyscrasia, as suggested by Collier, be the explanation of many cases of migraine, some change in the metabolism of the bile salts might be concerned in such dyscrasia. We have little knowledge as to the precise rôle in the body of the cholates and cholesterol or the exact part played by the liver in this respect, partly owing to the lack of an accurate means of estimating the quantity of bile salts in the blood. Bile-salt metabolism is, however, probably of at least as great or greater importance to the body than that of the bile-pigments with which most of our methods of liver function tests are concerned. Many investigations have suggested that it may be intimately concerned with both carbohydrate and calcium metabolism, as well as other important metabolic activities. It was, therefore, also in the hope of altering some possible "cholic acid dyscrasia" as well as of stimulating hepatic secretion that treatment by bile salts was undertaken.

RESULTS

There are unfortunately few conditions in which it is more difficult to draw conclusions from the effects of treatment than migraine. Not only may the attacks alter or cease spontaneously, but the influence of suggestion is almost impossible to exclude, and is of course of the greatest importance. Thus in the cases here described the psychological effect of the mere passage of the duodenal tube must be taken into account as well as other factors that cannot be controlled, such as the onset of the menopause and absence of nervous excitement. I have therefore merely indicated the effects of treatment with bile salts in 22 patients who have been observed for periods of from nine months to three years. This is admittedly too short a period for any final opinion on the value of the treatment. A number of patients under treatment for a shorter period have not been included, though 5 of these have had no attacks for periods of three to six months. In most cases capsules of the sodium glycocholate have been ordered in doses varying from grs. 2 to grs. 20 t.d.s., but in a few an unofficinal preparation, Decholin, has been used instead (one to six tablets daily) after food. This treatment has been maintained between attacks, and in most cases double doses have been advised if an attack has been threatening. The effect has appeared to be definitely greater when large doses have been employed, but in only two cases have even such big doses as grs. 60 of the sodium glycocholate a day caused diarrhœa or any digestive disorder. One of these patients, however, was unable to take a dose of grs. 2 b.d. without severe diarrhœa and nausea.

In most cases no other treatment was given, except in some the addition of glucose, especially when attacks appeared to be beginning. There were no special regulations about diet except for three patients who themselves regarded some special item of diet as provoking attacks. No change of life as regards environment or nervous stimuli was made. In seven cases the patients were at about the menopause, and in one case pregnancy and childbirth occurred during the period of observation; the latter factor tends particularly to lessen the frequency and intensity of attacks, but in a large proportion of patients attacks are more severe at the time of the climacteric.

It will be seen from Table II. that of the 22 patients 19 (or 86 per cent.) showed considerable improvement, and of these 9 had no further attacks at all while under treatment, and 4 were free for periods of one year or longer.

In the literature I have found only a few references to the treatment of migraine with bile-salt preparations. Muller records one patient remaining free of attacks for five months whilst taking decholin. Leischner also mentions two patients in whom improvement with this preparation occurred during periods of nine and five months' observation respectively. Several authors, however, report benefit from other measures directed towards biliary function, notably by repeated biliary drainage. Thus Haug and Wohrmann record "long-lasting" success in 50 to 60 per cent. of 200 patients treated in this way; McClure and Huntsinger great improvement in 24 of 29 patients treated by weekly duodenal drainage; and Vallery-Radot and Blamoutier in 15 of 24 patients. Rook, using large doses (3·2 to 4 of 50 per cent. solution) of magnesium sulphate by mouth, also reports relief of attacks in five cases.

TREATMENT OF THE ATTACK

Many drugs have been advocated and in particular the vasodilator drugs, such as sodium nitrite. I have found, however, that adrenaline—a vasoconstrictor—has been very much more successful in my hands. I have given adrenaline subcutaneously and as early in the attack as possible. The usual dose has been

♏ 10 of the 1/1000 solution, but ♏ 15 or ♏ 20 has sometimes been given, in which case it was injected slowly, as Hurst has advised for asthmatic attacks. Of 14 attacks (9 patients treated), 10 have been completely aborted, 3 definitely ameliorated, and 1 only unaffected. The later the injection is given the larger it should be, but the less effective is its action.

Although migraine is widely regarded as allergic in origin, perhaps akin to a cerebral angio neurotic œdema, it is surprising how little mention appears of the use of adrenaline in treatment. It is not mentioned in most of the larger text-books or original papers on this subject (Jelliffe and White, Nattrass, Curschmann, and others). The fact that in certain cases at least it is capable of checking the migraine attack suggests that some vasodilatation rather than a vasoconstriction of the cerebral vessels may be at fault, though any direct effect of adrenaline upon these vessels is uncertain, and of course the possibility of suggestion cannot entirely be excluded. The few opportunities that I have had of treating the actual attacks with adrenaline make me feel, however, that its effect may be as beneficial as in asthma provided a sufficient dosage is employed.

TABLE II

Age.	Sex.	Frequency of attacks before treatment and duration of attacks.	Period of observation.	Dosage (sodium glycocholate).	Number of attacks since beginning of treatment.	Presumed approx. number of attacks during equal time period before treatment.	Difference in number of attacks.	Comments.
36	F.	Weekly (12 hours)	1 year.	grs. 3 alt. days.	Free 3 mths. Weekly attacks when treatment omitted for 4 mths. No attacks 5 mths. on resuming treatment.	50	30 less.	Improved.
43	F.	3–4 weeks (12–24 hours).	1 ,,	grs. 20 t.d.s.	6	12–15	6 less.	,,
27	F.	3–4 days (12–24 hours).	16 mths.	grs. 5 t.d.s.	7	60–70	50–60 less.	Greatly improved.
41	F.	1–4 weeks (1–2 days).	14 ,,	,, ,,	No attacks.	10–15	10–15 less.	,,
32	F.	2–3 weeks.	18 ,,	Decholin tabs. 4 daily.	,, ,,	20–30	20–30 less.	,,
43	F.	3–4 weeks (3 days).	20 ,,	grs. 15 b.d.	1 (when drug omitted).	20–30	20–30 less.	,,
39	F.	1–2 weeks (1 day).	15 ,,	Decholin 1 tab. daily. 2 tab. daily.	Free 2 mths. 2 attacks (12 mths.).	30–40	30–35 less.	Improved.
23	F.	2–3 weeks (1 day).	9 ,,	grs. 3 t.d.s.	No attacks.	10–15	10–15 less.	Greatly improved.
48	F.	2–3 weeks (1–2 days).	10 ,,	grs. 5 t.d.s.	,, ,,	10–15	10–15 less.	,,
52	M.	2–3 weeks (12–24 hours).	2 years.	grs. 5 intermittently.	No attacks (2 warded off).	25–35	25–35 less.	,,
39	F.	3–4 weeks (1–2 days).	2½ ,,	grs. 5 t.d.s. intermittently.	4 attacks—none for last 2 years.	30–40	25–35 less.	,,
63	F.	5–8 days.	1 year.	grs. 5 t.d.s.	2	40–50	40–50 less.	,,
32	F.	2–3 weeks (12 hours).	10 mths.	grs. 3 t.d.s. intermittently.	No attacks.	15–20	15–20 less.	,,
24	F.	1–2 months (1–2 days).	2½ years.	grs. 5 t.d.s. intermittently.	,, ,,	15–30	15–30 less.	,, (pregnancy).
31	M.	1–3 months (irregular).	2 ,,	Decholin 1 tab. b.d. Irregularly. 1 tab. t.d.s.	No attacks 8 mths. 2 attacks. No attacks 1 year.	10–15	10–12 less.	Improved.
42	M.	8–10 days.	2 ,,	grs. 5 t.d.s. irregularly.	No attacks.	50–60	50–60 less.	Greatly improved.
40	F.	Monthly (2–3 days).	3 ,,	grs. 3 t.d.s. for 4 mths. and irregularly.	Attacks less severe, every 2–3 mths. Last 8–12 hours.	30–40	15–20 less.	Improved (menopause).
26	F.	2–3 weeks.	1 year.	grs. 5 b.d.	No relief, unable to take bile salts.	15–20	No change.	I.S.Q.
44	F.	1–2 ,,	1 ,,	grs. 5 t.d.s.	Free 8 mths. Return monthly attacks, less severe.	20–30	15–20 less.	Improved.
41	F.	3–4 ,,	3 years.	Decholin 1 t.d.s.	4 mths. free—return I.S.Q.	40–50	No change.	I.S.Q. (menopause).
26	F.	2–3 ,,	7 mths.	grs. 3 t.d.s.	2 attacks in 7 mths.	10–15	10–12 less.	Improved.
36	F.	1–3 ,,	15 ,,	,, ,,	No improvement.	25–30	No change.	I.S.Q. ? duodenal ileus.

SUMMARY: 22 patients.

No further attacks under treatment	8	Definite improvement 18.
Attacks less frequent and less severe	10	
Temporary relief	1	
No change	2	
Unable to continue treatment	1	

Case Records

CASE 1.—*Cholecystectomy.* Female, aged 30. Bilious attacks since childhood. Onset with partial amblyopia lasting half to two hours, followed by bilateral headache and profuse biliary vomiting; occasionally slight abdominal pain. Attacks at first every two to three months, later about once a week. Well in between attacks until five months before operation, when some persistent indigestion. Operation (December, 1929); three gall-stones present; gall-bladder removed; no evidence of inflammation microscopically. Biliary drainage (June, 1930): rapid flow 50 c.cm. light bile, followed by nausea and vomiting. Since operation: attacks unaltered (one year); recurring every fortnight. Indigestion relieved. Ordered sod. glycocholate grs. 5, t.d.s. No further attacks (five months).

CASE 2.—*Cholecystectomy.* Female, aged 43. Since childhood periodic attacks of severe right-sided headache, followed by profuse biliary vomiting and preceded by flashes in front of eyes. Occurring once a month, especially when overtired; sometimes brought on by taking eggs or milk. For last eight years some epigastric discomfort, constipation, and flatulence. Father, mother, and one sister suffer from bilious attacks. Biliary drainage: 25 c.cm. dark B bile obtained; headache and vomiting during later flow of bile. Operation (March 14th, 1932): three almost pure pigment stones; gall-bladder healthy naked-eye; cholecystectomy. After operation patient continued to have periodic bilious attacks of about the same frequency, unaltered by the operation; flatulence and indigestion relieved. Ordered sod. glycocholate grs. 3, t.d.s. Since then one attack only in four months.

CASE 3.—*Cholecystectomy.* Female, aged 37. Bilious attacks since childhood. Mother has migraine. Onset with headache and photophobia, followed by severe biliary vomiting, occurring about every four to six weeks. Last seven years some flatulence, abdominal discomfort, and nausea between attacks, dating from pregnancy. Biliary drainage: no bile obtained; discomfort in right hypochondrium. Cholecystogram: no gall-bladder shadow obtained. Operation (March 12th, 1932): numerous cholesterol pigment calculi; very slight cholesterosis of gall-bladder; cholecystectomy. Biliary drainage (June 12th): 10 c.cm. pale bile withdrawn, followed by vomiting. After operation frequent attacks of headache, nausea, and vomiting. Ordered sod. glycocholate grs. 3, t.d.s. Two attacks only since beginning treatment (four months).

CASE 4.—*Cholecystectomy.* Female, aged 58; married. Attacks of severe headache brought on especially by excitement; preceded by feeling of extreme hunger, associated with drowsiness and bright lights in front of eyes. Followed by profuse biliary vomiting. Periodic attacks for 22 years; well between attacks, except for constipation and some flatulence after food during the two years preceding operation. Jaundice for three days 12 years previously. No colic. No abdominal pain. Biliary drainage: 75 c.cm. light bile withdrawn in 15 minutes, then complained of vertigo and flashes before eyes; vomited at 20 minutes. Operation: eight gall-stones in gall-bladder, slight chronic inflammation of its walls; cholecystectomy. No further attacks since operation (four months).

CASE 5.—*Cholecystectomy.* Male, aged 30. Attacks of severe biliary vomiting since age of 20. Very drowsy before attacks and constipated. Recurring about every two months, sometimes oftener; last about two days. In some attacks temperature up to 101° F. Some abdominal discomfort during attacks only. Well in between; attacks particularly brought on by nervous worry. Father has similar attacks. Pyelography (1922): normal. Appendicectomy (1923): no change in symptoms. Cholecystectomy (1927): one large stone removed. No change in frequency or character of attacks since operation (three years). Biliary drainage (1930): immediate flow good volume thin bile. Excess of urobilin and albumin. 1933: treated with glucose and bile salts; no attacks for 8 months, and only two attacks during last 14 months.

CASE 6.—*Cholecystectomy.* Female, aged 40. Attacks since age of 25 of intense left-sided headache, preceded by sparks before eyes and followed by severe biliary vomiting. Occurring every two or three weeks and lasting two or three days. Sister has migraine. Cholecystectomy (1928): details not known; no change in frequency or severity of attacks since operation (three years). Biliary drainage (1931): small volume light bile obtained: flashes before eyes and left-sided headache three minutes after beginning of bile flow, later nausea and vomiting. Treatment: not undertaken.

CASE 7.—*Duodenal obstruction; cholecystectomy.* Female, aged 39. Two attacks biliary colic, the last associated with jaundice. Gall-bladder drained August 20th, 1929. For five months since operation attacks every three to four days of severe frontal headache with nausea and biliary vomiting, lasting four to twelve hours; no jaundice, no abdominal pain. Gall-bladder removed January, 1930. No calculi, very slight evidence of inflammation; adhesions round duodenum. Since last operation no further attacks (three years).

CASE 8.—Female, aged 59. Attacks since age of 15 of severe right-sided and occipital headache, retching, and vomiting; persistent yawning before attacks, flashes before eyes, and photophobia. Attacks especially brought on by worry and by eating eggs; mother similar attacks. Biliary drainage: traces bile only withdrawn. No B bile. Cholecystogram: faint shadow. Barium meal: some colon spasm (whole tract). Treated with decholin, one tablet t.d.s. Two attacks only during seven months' observation; reports complete freedom during last eight months.

CASE 9.—Female, aged 43. For 30 years attacks of severe headache, mainly left-sided, and profuse biliary vomiting, preceded by feeling of great hunger and craving for sugar. No ocular symptoms; mother and grandmother similar attacks. Well between attacks; occurring every one to two weeks. Biliary drainage: 20 c.cm. dark bile withdrawn; severe headache at onset of flow; nausea and vomiting at end of 25 minutes; bile shows excess urobilinogen and slight excess albumin. Cholecystogram: large faint shadow with slow emptying after fatty meal. Treated with bile salts for two years; has only had eight mild attacks, three during one month when no bile salts were taken.

CASE 10.—Male, aged 52. Periodic attacks left-sided headache and nausea since age of 15; occurring every two to three weeks, preceded by intense yawning. Well between attacks; no ocular symptoms; one sister similar attacks. Much distaste for fats before attacks; onset with hyperæsthesia left side of scalp. Biliary drainage: good flow bile, 40 c.cm. fairly dark B bile; bile shows excess urobilinogen, no excess albumin. Cholecystogram: very faint shadow. Treated with bile salts and glucose for two years; no further attacks; has been able to ward off several impending attacks by taking double dose of bile salts.

CASE 11.—Female, aged 43. Bilious attacks since aged 6. Anorexia before attacks, spectra before eyes, headache, followed by severe biliary vomiting; last two to three days, occurring about every four weeks. Well between attacks; grandmother and daughter similar attacks. Biliary drainage: slow flow, small volume pale bile; no concentrated bile; headache at onset of flow, with nausea at 15 minutes; bile on Ehrlich's test gives canary yellow colour, no excess albumin. Cholecystography: no gall-bladder shadow obtained. Treated with bile salts and glucose. One attack only in two years (when treatment omitted).

CASE 12.—Female, aged 47. For 13 years attacks about every ten days of headache and severe biliary vomiting, especially brought on by chill or worry. Very drowsy before attacks and constipated; in several attacks aphasia at onset. Jaundice aged 21. No ocular symptoms. Biliary drainage: slow flow bile; 30 c.cm. dark B bile; shows excess urobilinogen and slight excess albumin. Cholecystogram: faint shadow. Treatment not undertaken.

CASE 13.—Female, aged 36. Bilious attacks since childhood; occurring about every four weeks, especially brought on by excitement. Flashes of light at onset,

with headache and profuse biliary vomiting; severe vomiting during three pregnancies; mother similar attacks. Biliary drainage: traces bile only; headache after mag. sulph. injection; vomiting one hour later. Cholecystogram: very faint shadow just visible. Treated with bile salts, grs. 3, alternate days; no attack for two months, then return of attacks; dose increased to grs. 60 daily. Since then one attack only (19 months).

CASE 14.—Male, aged 49. Periodic attacks since age 12 of headache and severe vomiting about every four weeks. Drowsiness and flashes before eyes at onset. Father and mother similar attacks. Well between attacks except for last two years, when some persistent indigestion, flatulence, and depression. No jaundice or colic. Appendicectomy (aged 28): no change in symptoms. Biliary drainage: slow flow 45 c.cm. rather pale bile; no dark B bile withdrawn; bile shows great excess urobilinogen, no excess albumin. Cholecystogram: very faint gall-bladder shadow. Treatment not undertaken.

CASE 15.—Female, aged 27. Periodic bilious attacks every two or three weeks since age of 12. Onset with vertigo, followed by headache and severe biliary vomiting. Attacks last 12–24 hours. Well between attacks until last two years, when some persistent nausea, constipation, and discomfort in right hypochondrium. Biliary drainage (two occasions): no concentrated bile obtained; slow flow 50 c.cm. pale bile, followed by vomiting; bile shows no excess urobilinogen, some excess albumin. Cholecystogram: very faint gall-bladder shadow. Treatment: bile salts caused diarrhœa and could not be continued.

CASE 16.—Female, aged 52. Periodic attacks, every two or three months since age of 14, of headache, mainly right-sided, followed by severe biliary vomiting. No ocular symptoms. Father and sister both have similar attacks. For three years persistent indigestion and two attacks of colic followed by jaundice and pale stools. Cholecystogram: no shadow of gall-bladder. Biliary drainage: poor flow of thin bile associated with nausea; no B bile obtained. Treatment: operation refused; improvement under bile-salt treatment.

CASE 17.—Female, aged 37. Attacks since childhood of flashes before eyes, occasionally partial amblyopia, right-sided headache, and profuse biliary vomiting; occurring about every three to four weeks and lasting 24 to 36 hours. No migraine in family. Last eight years some flatulence; one year persistent discomfort right hypochondrium. Appendicectomy (1924): no change in attacks. Cholecystogram: fair shadow; three filling defects probably due to stones. Biliary drainage: slow flow; 12 c.cm. very concentrated B bile obtained; excess urobilinogen and albumin. Treatment: not undertaken.

Conclusions

(1) An analysis of 60 cases of migraine is given, of which 40 were of the bilious type.

(2) Investigation by biliary drainage and oral cholecystography showed some evidence of gall-bladder or hepatic disorder in 17 of 27 selected "bilious" cases.

(3) A higher proportion of migraine patients as a whole show evidence of gall-bladder disorder than normal subjects.

(4) Evidence of "stasis" in the gall-bladder was found in 7 of 27 patients examined by biliary drainage.

(5) Local gall-bladder disease or dysfunction is not a cause of migraine, but may occur as the result of repeated migraine attacks or of some primary underlying hepatic or constitutional cause.

(6) Cholecystectomy had no effect in relieving migraine attacks in 5 of 6 patients investigated.

(7) The importance of inquiry for migraine attacks in subjects of gall-bladder disease and its bearing upon the results of cholecystectomy are emphasised.

(8) The results of treatment by bile-salt preparations by mouth are recorded in 22 selected patients, of whom 19 were improved.

(9) It is suggested that some hepatic dysfunction may be a cause of migraine attacks in certain cases; this is supported by the results of bile-salt treatment.

(10) Adrenaline given subcutaneously is capable of aborting migraine attacks in a high proportion of cases.

My thanks are due to those members of the honorary staff at St. Mary's Hospital who have allowed me to examine patients under their care, and especially to Dr. Wilfred Harris, Prof. F. S. Langmead, and Mr. V. Zachary Cope for their assistance and advice. I am also greatly indebted to my colleagues, Dr. H. Orton, Dr. H. C. Gage, and the staff in the radiographic department at St. Mary's, for carrying out the X ray examinations of many of the patients described. Finally, I wish to express my gratitude to the trustees of the Mackenzie-Mackinnon research fellowship of the Royal Colleges of Physicians and Surgeons. This investigation forms part of the work undertaken during tenure of this fellowship.

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SOME SPECIAL USES OF RADON SEEDS

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THE comparative value of radium and of its emanation radon in the treatment of carcinoma has still to be assessed, and the time has not yet come when it is possible to arrive at a definite judgment. Each presents advantages of its own and it is probable that each will in time acquire its special field. Meanwhile there are certain cases in which there is really no choice, in which radon seeds alone offer any prospect of success, in which indeed treatment will only be attempted by those who are familiar with the peculiar possibilities of this method. It is solely to these cases, often untreatable by any other means but by no means rare, that I wish to direct attention.

The seeds which we are now employing are very much smaller than those in general use. They consist of gold tube, slightly less than 1·0 mm. in outside diameter and about 3·0 mm. in length. By a special method the radon gas is drawn directly into the gold tube, which is then sealed off and cut up with special cutters into seeds. Perfect sealing is secured by using annealed tube and cutting it under oil. Each seed contains from 0·5 to 1 millicurie

of radon gas, and the wall gives 0·3 mm. of gold screening, which appears to be ample for these small amounts. As a rule no attempt is made to remove the seeds, which even in the palate cause no disturbance.

The seeds are inserted by a special apparatus which I introduced some years ago and which has the advantage of simplicity. It consists of a long hollow needle, a rotating barrel to carry ten seeds, and a stilette by means of which they can be delivered to the tissues at the point of the needle. With this instrument it is possible to insert the seeds with great rapidity and with remarkable accuracy, for as it is not necessary to withdraw the needle they can be deposited in long rows end to end, at any interval desired. The most even radiation is of course obtained where seeds are introduced in large numbers and distributed uniformly. With the minute seeds I have described it is thus easy to obtain, through the effects of crossfire, a very uniform field of radiation, the first essential of success in any form of radium therapy.

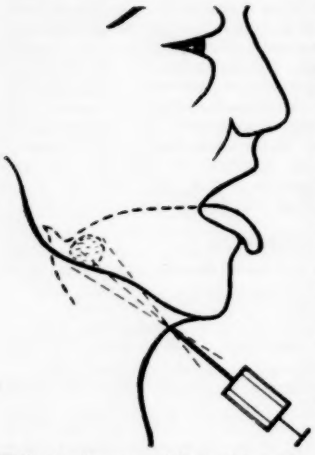

FIG. 1.—Tumour of base of tongue.

THE BASE OF THE TONGUE

The first cases to which I wish to refer are those of carcinoma at the base of the tongue. The site is a common one, the region is most inaccessible, and the tumours are specially sensitive to radium. Even when first seen the tumour may involve the epiglottis or extend to the fauces or the pharynx. In most cases, however, it will still be possible to draw the tongue well forward and to obtain a view of the growth or at least to define its limits accurately by palpation. The problem is now to implant a uniform zone of seeds on the deep surface of the tumour so as to irradiate its growing edge. This is very easily accomplished from the neck below the jaw by first making a small puncture with a tenotomy knife and then passing the needle of the introducer through the muscle of the root of the tongue. As a rule the carcinoma is a deeply excavated ulcer, but with the guidance of a finger inserted into this one can easily form a large field of seeds beneath and around it (Fig. 1). Very small seeds should be used and a total dose of 10 mc. will usually be sufficient. With a limited growth the local results are remarkably good, and fortunately this is a region in which glandular metastases are uncommon.

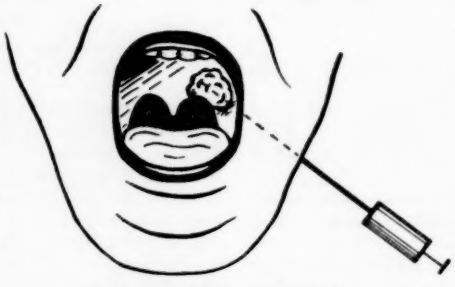

FIG. 2.—Tumour of palate.

THE SOFT PALATE

The soft palate is another region favourable to radium treatment but to which a convenient means of access is not obvious. It can however be reached with very great ease from a point in the neck just below the angle of the jaw, and I now never adopt any other method. This point lies in the plane of the soft palate, and a needle inserted here can be passed into any portion of the soft palate on the same side without entering the mouth (Fig. 2). Moreover, the palate tolerates the presence of these small seeds perfectly and I have experienced no trouble from their introduction. Weak seeds must be used and the total dose limited to 10 mc. in an ordinary case.

Man, aged 55. Had complained of soreness in the throat for three months. A fungating carcinoma extended down from the posterior margin of the hard palate on the left side, and outwards to the posterior end of the alveolus. Six 1·5 mc. seeds were inserted, making a total dose of 9 mc., and the glands in the right side of the neck were dissected out. The growth disappeared completely in 14 days. Healing was complete in a month, and has remained perfect for five years. (In a similar case we should now insert 12 seeds of 0·5 mc.)

FIG. 3.—Retropharyngeal tumour.

A short time ago I was faced with the difficult problem of a large post-nasal carcinoma, arising from the posterior wall of the pharynx and forcing the soft palate down to such an extent that the patient could not swallow and could scarcely breathe. A gland in the neck had already been removed and showed the growth to be an oat-celled carcinoma of a responsive type. Shrinkage of the tumour would give immediate relief, but the problem was one of access. When the head was fully retracted it was seen that a point in the side of the neck, two inches below the jaw, lay in the same plane as the front of the bodies of the upper cervical vertebræ, and it appeared that from this point the long needle of the introducer could be passed into the growth on its longer axis (Fig. 3). Working from symmetrical points on the two sides 30 seeds were introduced in two radiating fans overlapping one another, and an arrangement of peculiar symmetry and uniformity was obtained. The tumour disappeared in three weeks and the patient was completely relieved. Unfortunately the glandular involvement spread and could not be checked, but there was never any local recurrence. As a means of reaching the region behind the nasopharynx the method is most satisfactory.

THE ŒSOPHAGUS

The treatment of œsophageal carcinoma by radium has proved disappointing, for although these tumours

are sensitive to radium they are so inaccessible that it is impossible to obtain a satisfactory distribution. In most regions our method of intubation works well, and it is almost always possible to enable the patient to swallow. At the cardiac orifice even this fails, and the surgeon is usually driven back upon a gastrostomy. Recently we have been attempting a full transthoracic exposure, with the insertion of seeds around the growth, and the results have been encouraging.

As incision in the ninth intercostal space extends along its whole length, and through this, by forcible separation of the ribs, the thoracic cavity is opened up. Intratracheal anæsthesia is obviously essential, and it is of vital importance that just before the pleura is opened there should be a sufficient positive pressure to prevent any sudden collapse of the lung. Very free access to the lower œsophagus is usually obtained, and if it is desired to expose the cardia itself, the diaphragm may be divided from the œsophagus forwards to the tenth costal cartilage without risk. Manipulations are much facilitated by producing temporary paralysis of the diaphragm by injecting the phrenic nerve at the point where it passes from the pericardium to the diaphragm. If it is desired to expose the œsophagus fully, this is easily accomplished by dividing the pleura over it, when it peels out readily from the cellular tissue in which it lies. If, however, it is possible to avoid this it is better to do so, as the unavoidable interference with the vagus causes a certain amount of shock. All that is required is a sufficient exposure to ensure that the seeds can be inserted in a uniform group into and around the tumour. The number required will vary with its extent, but 40 seeds of 0·5 mc. will be ample for any case that is capable of treatment. Before closing the chest an assistant passes a bougie from the mouth which is guided through the growth by the fingers of the operator.

The tissues are now carefully closed over the œsophagus, the diaphragm sutured, and the chest wall closed, the two ribs being approximated by heavy catgut sutures encircling them. The entire absence of shock (unless the vagus is disturbed), the comfort of the patient next day, and the complete freedom from pulmonary complications are very remarkable.

Man, aged 66. Had complained for two weeks of difficulty in swallowing, and was now only able to swallow fluids with considerable difficulty. Radiography showed a carcinomatous stricture in the region of the cardiac orifice. On thoracic exploration a small carcinoma was found on the anterior wall of the œsophagus just above the diaphragm, into the substance of which a small extension had occurred. On opening the diaphragm a few doubtful glands were found, but the growth did not extend below this level. The pleura was divided over the œsophagus which was completely freed, and 30 gold seeds were attached to its surface by means of minute strips of gauze soaked in Mastisol. The œsophagus was replaced and the pleura closed over it. The diaphragm and chest were closed as usual after passage of a bougie under digital control. Swallowing rapidly improved and at the end of three weeks he was able to take ordinary food. He remained in good health and at work for six months when he died quite suddenly, probably from hæmorrhage.

These instances will suffice to illustrate a method which is peculiarly flexible and which can be applied in situations which at first sight appear to be inaccessible. Even where cure is impossible it enables one to give a relief which otherwise could not be obtained, whilst occasionally it is followed by a success for which one scarcely dared to hope. The trivial degree of trauma involved is sometimes of vital importance, since in many of these patients resistance is lowered to the point of danger. I would only warn the surgeon that although the trauma may be slight, the technique involved is not so easy as might at first appear, and that success can only be obtained by an accurate dosage—the result of wide experience—and a precision which only comes from practice.

A NOCARDIAL (STREPTOTHRIX) ORGANISM

IN FOUR RECENT CASES OF ACHOLURIC JAUNDICE

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In a recent book [1] the grounds of the mycotic hypothesis for certain of the chronic splenomegalies were critically examined and the conclusion arrived at was that the causal organism was probably a streptothrix of the genus nocardia.

Within the last three years the spleens of four cases of acholuric jaundice have been examined bacteriologically after surgical splenectomy and three of these have proved positive; in addition a blood culture after long incubation from a case already reported proved to be positive and is included.

CULTIVATION OF THE ORGANISM

The organism that is being looked for in these cultures is aerobic, therefore no pains have been taken to isolate any anaerobic organisms. In making routine subcultures of the nocardial organisms that have been previously isolated it had been found that a modification of Hibler's brain broth [2] was slightly better than the serum broth which had hitherto been used. A further trial of peptone veal broth in which a portion of spleen was immersed proved to be again a little more stimulative of growth than any other medium. The method now adopted and found satisfactory is as follows. To each tube of ordinary peptone veal broth is added some precipitated calcium carbonate, then a small portion of fresh human spleen obtained from a post-mortem, and the whole autoclaved at 120° C. The result is a tube of clear broth, but adhering to the sides is usually some coagulated fibrin. The spleen and calcium carbonate settle down to the bottom, and the latter is occasionally adherent to the sides.

The effect, on the growth of those organisms previously isolated, of spleen tissue from different post-mortems appears to be the same, but no spleen is used that is not firm and free of obvious disease, such as sepsis. The spleen, for instance, of a case of congestive cardiac failure appears to give the same result as that from pulmonary tuberculosis as tested upon strains under continuous cultivation. Made in this way the pH value of the autoclaved medium is 7·4, whereas the pH of the peptone veal broth in use is 7·6. When properly capped these tubes remain sterile for an indefinite period, and in making cultures from the spleen pulp are watched for a year or more.

In making cultures from spleens surgically removed, portions of the spleen pulp are transferred aseptically and dropped into the spleen broth. In all cases the siderotic nodule (Gandy-Gamna) is excised in preference to the general spleen pulp. The first indication of growth is the presence of minute fluffy balls just above the solid spleen. These rise up the sides and gradually form a zone at or beneath the meniscus of the fluid.

THE CASES

The main facts about the cases are as follows :—

Ada K.—This case has been detailed previously.[3] It was one of acquired acholuric jaundice, and the patient died under observation in a hæmolytic crisis. Six blood cultures altogether had been taken at different periods of the illness, using trypsin broth, serum broth, and brain broth. Examination of the broth from time to time microscopically showed doubtful bacterial forms. Out of a total of 70 tubes macroscopic growth occurred in three. Two of these were moulds seen after 13 to 118 days respectively. The other was a nocardial organism identified as such after 396 days. The features of growth in spleen broth are those of *Nocardia splenica*.[4]

Mrs. A.—The patient, a married woman aged 25, had been jaundiced, as well as paralysed on the right side, since birth. She came of a family in which jaundice had been present in three generations. Her grandfather, father, an uncle, two sisters, and a brother were jaundiced. All four members of the last generation had had their spleens removed. She had no complaints and had never suffered from a crisis. She complained that she was more yellow when she felt run down.

The sclerotics were yellow, and there was generally slight icterus though the cheeks were red. The spleen was just palpable. Van den Bergh's reaction was direct positive; there was 1 unit of bilirubin in the serum. The fragility was little altered from the normal. It started from 0·44 per cent. of saline and was complete at 0·36 per cent. Blood count: hæmoglobin, 75 per cent.; red cells, 3,360,000; white cells, 10,000.

Mr. Harold Upcott, of Hull, to whom I am indebted for the clinical details and the opportunity to examine the spleen, performed splenectomy on June 10th, 1930, and it was received packed in sterile wool on the 11th. The organ was slightly enlarged and measured $15 \times 0{\cdot}5 \times 7{\cdot}5$ cm. No adhesions were visible. On section the substance was occupied by deep red firm pulp with few Malpighian bodies and few trabeculæ. Several small thickened arteries stood out from the cross section. There were no thromboses or hæmorrhages. In serial sections made under aseptic conditions 15 minute buff-coloured specks subsequently identified as siderotic (Gandy-Gamna nodules) were excised, and with other portions placed in 34 culture tubes (12 serum broth, 18 brain broth, and 4 spleen broth). Subcultures were made at intervals from some of the tubes, and they were examined carefully for several months. After 60 days in one tube only there occurred a growth of a nocardial organism which on subculture grew in the way described for *Nocardia splenica*. Four tubes out of the series of 34 were contaminated.

Results of Culture from Three Members of the F. Family.—This family has been under observation since 1921, and has been reported by Mr. Joyce and Dr. Mills.[5] I am greatly indebted to both these gentlemen for their kindness in letting me examine the spleens. In addition to what they reported, the grandmother of the children had gall-stones, and a female cousin on the grandmother's side is reported to have had jaundice from birth. There is therefore a history of jaundice or a condition of the gall-bladder in three generations.

Dr. Mills kindly brought the spleens from Reading to Oxford.

I., male, aged 20. The specimen received the day of the operation, March 19th, 1931, was a portion of a large spleen without any alteration in the capsule. On section the pulp was dark red, Malpighian bodies could be distinguished but were not prominent or enlarged, and there was no increase in trabeculæ. Scattered throughout in relation to the trabeculæ were minute pale buff-coloured streaks and dots, which on microscopic examination showed the structure of a siderotic (Gandy-Gamna) nodule. Altogether 48 culture tubes of spleen broth were inoculated aseptically from the buff-coloured points on March 19th, 1931. These were observed for several months, and subcultures were made from time to time. No growth, however, was obtained.

II., male, aged 18. The spleen was removed by Mr. Joyce on April 7th, 1932, at 12 noon, and was examined by me at 2 P.M. on the same day. It measured $19 \times 6{\cdot}5 \times 11{\cdot}5$ cm., and its weight was 520 g. The substance was not firm and resembled that of the normal spleen. There were a few minute tags of fibrous tissue from adhesions that had been severed attached to the capsule. On section the pulp was deep red, firm, and Malpighian bodies were seen. Buff-coloured minute nodules were sparsely scattered throughout. Microscopically the structure was the same as in Case I. Altogether 28 tubes were inoculated. Subcultures of these were made eight days after, and both series were observed. A nocardial organism grew in one of each series and from different portions of the spleen in 44 and 131 days respectively from the first inoculation. Both these strains grew easily in spleen broth after they had grown sufficiently in the original tube. Six of the tubes in each series were contaminated, one with an aspergillus.

III., male, aged 14. Splenectomy was performed by Mr. Joyce on July 11th, 1932. The spleen was brought to me by Dr. Mills at 5.30 P.M. on the same day. It was fairly firm, measured $12 \times 7 \times 4$ cm., and weighed 159 g. The surface was smooth with a few thickenings at points on the surface. There was a small accessory spleen at the hilum. On the surface the pulp was deep red, fleshy, and firm; the Malpighian bodies were enlarged and their limits distinguished with difficulty. Trabeculæ appeared, naked eye, to be increased. No siderotic nodules were found in any part of the spleen on serial section.

Histologically no sign of a siderotic nodule was seen, and the Malpighian bodies showed two types: (1) small with a zone of congestion surrounding it; and (2) large diffuse bodies with generalised congestion. There were a few doubtful hæmorrhages, one of which was underneath the capsule.

Cultures from the general spleen pulp were made into 24 tubes of spleen broth. These tubes were observed for several months, and in one after 56 days there grew a nocardial organism.

REMARKS

The organisms from the four cases have not been studied as to their pathogenicity, but they are identical in their morphological and cultural features with those described elsewhere.[6] They are delicate organisms, they grow best at 37° C., and to be kept alive must be subcultured at least once monthly in some liquid medium; on solid media they cannot be kept continuously alive. The colour of old cultures from Ada K. and Mrs. A. are white; those from the two members of the family F. are a dark cream colour. The total number of nocardial organisms that have been isolated from cases of acholuric jaundice now amounts to six, five of which are still under culture.

The four patients from whom the present cultures have been obtained comprise: (1) an acquired case of acholuric jaundice (Ada K.) that had been studied on two occasions and who died in a hæmolytic crisis; (2) a case of familial acholuric jaundice (Mrs. A.); and (3) and (4) two brothers from a family in which the disease is known to have been present in three generations. The last patient (III., above) presented extremely slight signs of the disease and no enlargement of the spleen; he therefore belongs to the cases that occur in these families and have been occasionally recorded, to which Campbell and Warner [7] drew attention in 1926. The spleen of this case showed but slight variation from the normal in the enlargement of some of the Malpighian bodies, and a few recent hæmorrhages which may have been caused by traction at the operation, and yet this spleen gave a positive culture of a nocardial organism. The inference is that assuming the organism to be the cause of the disease, it may

lie dormant or produce little disturbance of health and yet give rise to the slight signs that Campbell and Warner have taken to be the hereditary factor.

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LYMPHOGRANULOMA INGUINALE

(PORADENITIS NOSTRAS)

WITH OBSERVATIONS ON THE PRIMARY LESIONS

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With a Note on the Pathological Findings by

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In October, 1932, Stannus [1] suggested that cases of lymphogranuloma inguinale existed in this country but were unrecognised. In the discussion on his paper evidence was given that the disease was almost unknown in the venereal clinics here and the opinion was expressed that these cases were not being missed.

It is well known, however, on the Continent, especially in Germany and France, and it is likely to become more prevalent in Great Britain. Therefore early diagnosis is of great importance and some observations on its primary lesions may be advantageous.

The first recorded case in which infection was proved to have been acquired in England was published recently by Stannus and Findlay.[2] Unfortunately in this case the type of primary lesion was not known as, owing to its characteristic rapidity in healing, only a tiny scar marked the site of entry. The primary sores are inconspicuous and are commonly unrecognised. Many observers have described them, including Phylactos [3] in his thesis. Hellerström [4] follows his classification and divides them into four types: papular, ulcerative (this includes herpetiform and erosive lesions), nodular, and what he chooses anatomically to name the "urethritic" variety. All these types are of the same pathogeny, and only vary in degree. When syphilis is excluded, among the 47 cases which he collected only 14 had primary genital lesions, of which 10 were ulcerative, 2 papular, and 2 urethritic. No instance of the nodular variety occurred.

It is of interest therefore to record three recent cases at the London County Council (Whitechapel) Clinic. In two the primary lesion was on the external genitalia, while in the third it was intra-urethral. The importance of this last type of case, in which the intra-urethral primary inoculation causes a urethritis, cannot be over-emphasised, as it is so dangerously infectious and can so easily pass undiagnosed. None of these cases had any of the accompanying balanitis that is sometimes described.

The first case had an ulcerative primary lesion and will be described in full, as it is the second case in England of lymphogranuloma inguinale proved to have been acquired in this country and in which the diagnosis has been confirmed by animal experiments. A second case at the Whitechapel Clinic had a papular primary lesion which was classical in type. A raised infiltrated papule, the size of a pea, protruded from the proximal side of the coronal sulcus in the mid-line of the penis on its dorsal aspect. The epithelium over it was partly denuded, as though by friction, but not of sufficient depth to form an erosion or ulcer. In the third case no obvious lesion presented on the external genitalia, but a scanty, thin, whitish, mucopurulent discharge which exuded from the urethra contained pus and epithelial cells. In spite of numerous tests, no gonococci or other microscopical organisms were found. No infiltration or induration could be felt along the course of the urethra.

In other respects, these three cases possessed the typical adenitis and followed the usual course of lymphogranuloma inguinale. The secretions and the fluid obtained by gland punctures were all repeatedly, but unsuccessfully, dark-grounded for *Spirochæta pallida*, while the Wassermann and Kahn tests were negative over a period of three months. Both syphilis and gonorrhœa were excluded in all three cases.

The infection in Stannus's case was contracted in Soho and treated at the French Hospital which serves that area. Although the Whitechapel Clinic serves a large area, including many rural districts, these cases have come from Dockland. For example, the stoker whose case record follows lives at Limehouse, E.14. This is close to the docks, and it is possible that these men were infected by women who had contracted the disease from sailors who were suffering from climatic bubo, which it is now certain is identical with the lymphogranuloma recognised on the Continent.

CASE RECORD

The patient was an unmarried Englishman, aged 18 years. He had never been abroad and was employed as a stoker on a steam wagon. He was sent for diagnosis to the London County Council (Whitechapel) Clinic on Nov. 25th, 1932 (two months after the case recorded by Dr. Stannus).

Six months before the onset of symptoms he had had clandestine intercourse with an English girl in the East End; he denied subsequent coitus, but this statement seems open to doubt. On or about Nov. 11th, 1932, he noticed a small painless sore on the coronal sulcus to the right of the frenum. This was followed within a few days by a tender, but not painful swelling in each groin, which was increasing in size. He had been feeling "off colour" for some days and complained of constant headache for two days before his first attendance.

On examination he was heavy-eyed and looked ill; his temperature was 99·5° F. and his pulse-rate 120. In the furrow of the coronal sulcus to the right of the frenum was a superficial herpetiform ulcer. This smooth greyish erosion had a non-indurated base with irregular edges. Some healing which had taken place at the margins was indicated by the three small furrows radiating from the lesion. In each inguinal region was a large elongated swelling above the folds of the groins with the long axis parallel with Poupart's ligament. The swelling in the right groin, about the size of a hen's egg, was rather larger than that in the left. The skin over the enlarged glands was in each case red, with a bluish tint, and adherent. On palpation the masses were markedly indurated and tender. At their margins the outlines of individual lymphatic glands could be distinguished. Central fluctuation could not be elicited. No glandular enlargement could be detected elsewhere in the body, nor were the liver or spleen palpable. There was no abnormality in the region of the rectum.

Dark-ground examination of the serum from a scraping of the sore repeatedly failed to reveal the presence of *S. pallida*; the Wassermann and Kahn blood-serum reactions were negative then and subsequently (Dec. 2nd, 1932, and Jan. 5th, 1933). Unfortunately, antigen for Frei's intradermo-reaction was not available.

On Nov. 28th the right inguinal swelling showed central fluctuation. This was aspirated and a few minims of thick whitish pus were withdrawn. Microscopical examination showed many pus cells but no organisms. The cultures were sterile. These tests were subsequently repeated on several occasions after aspiration and the same results were invariably obtained. On Dec. 2nd both groins were aspirated; 2 c.cm. of pus was withdrawn from the left and 5 c.cm. from the right. The right side was aspirated on three occasions and altogether 8 c.cm. of pus was obtained. A total of 9 c.cm. of pus was obtained from the left swelling after aspiration on six occasions.

Treatment consisted in rest, hot fomentations to both groins, and frequent aspirations when fluctuation was obtained. Two intramuscular injections of manganese butyrate were given: on Nov. 26th 1 c.cm., and on Nov. 29th 1·5 c.cm. Saline dressings were applied to the preputial sore. The patient's general condition appeared to be improved as a result of the aspirations, and it was not considered necessary to confine him to bed. The sore had healed by Dec. 2nd, and aspiration of the right inguinal swelling was not required after that date. The left swelling ultimately grew larger than the right but responded finally to repeated aspirations, which were discontinued after Dec. 19th. From this date the inflammatory masses of both groins were steadily absorbed and by Jan. 19th, 1933, only slight thickening of the inguinal glands and brown staining of the skin over them remained.

This case shows the superficial, transient character of the initial lesion and the rapid and satisfactory response of the disease to conservative measures of treatment. The diagnosis was confirmed by Dr. Marshall Findlay's animal experiments.

PATHOLOGICAL FINDINGS

Pus was inoculated into the groins of three guinea-pigs and one cercopithecus monkey and into the brains of twelve mice on Dec. 3rd.

Two of the guinea-pigs produced swellings in the groin; material from one of these was removed and inoculated into six mice intracerebrally (Dec. 19th); two of these mice died with typical nervous symptoms and histological changes characteristic of the meningo-encephalitis produced by the virus of climatic bubo. The cercopithecus monkey also showed definite glandular swelling in the groin; the bubo was removed on Dec. 13th and inoculated intracerebrally into six mice, three of which died with characteristic nervous symptoms. Of the twelve mice inoculated directly with pus, ten died after incubation periods varying from 7 to 29 days; a second passage was made into the brains of six mice, three of which have also died, and a third passage is now being carried on. Histological examination of the brains of the mice showed evidence of the characteristic meningo-encephalitis, while the buboes from guinea-pigs and monkeys were characterised by a proliferation of plasmacytoid cells and plasma cells and infiltration with polymorphonuclear leucocytes.

DIAGNOSIS

There is no doubt that watch must be kept for these cases of lymphogranuloma inguinale and other conditions due to infections with this ultramicroscopic virus. Attention is drawn to the following points of differential diagnosis:—

1. The incubation period from the infecting coitus to the primary lesion may be from three days to three weeks, generally about two weeks; from coitus to the appearance of bubo may be from ten days to six weeks, generally about three weeks. These intervals are longer than those of the average chancroidal and gonococcal cases.

2. The primary lesion is painless, usually transitory, and heals spontaneously. The intra-urethral lesion is accompanied by an abacterial urethral discharge of thin, milky fluid. *S. pallida*, Ducrey's bacilli, and tubercle bacilli are absent in unmixed infections. The possibility of double infections must never be forgotten. Repeated dark-ground examinations of serum and fluid obtained from lymphatic gland puncture must be made to exclude *S. pallida*.

3. The adenitis may be unilateral or bilateral; it is usually not very tender. Multiple foci of suppuration in the glands may develop the formation of multiple fistulæ. Thin whitish pus like a milky emulsion is obtained by gland puncture or from the fistulæ. The skin over the enlarged glands becomes characteristically purplish in colour. As periadenitis spreads towards the surface the skin becomes adherent. Careful palpation in the iliac fossæ may reveal associated enlargement of the iliac glands.

4. These cases in the early stage must be differentiated from herpes genitalis, which irritates and may be painful. The adenitis accompanying herpes is mild and transitory and suppuration is rare.

5. The Wassermann, Kahn, and other syphilitic serum tests remain persistently negative, unless there is a mixed infection.

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INTESTINAL OBSTRUCTION DUE TO BANDS IN THE ILEOCÆCAL REGION

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THE adhesions and bands met with in the ileocæcal region can be classified according to the pathological (or physiological) conditions which determine their formation. Thus we find them in:—

(1) Cases in which there have been one or more attacks of acute appendicitis.

(2) Cases which have run a chronic course—conveniently labelled chronic appendicitis—in which an exploratory operation reveals an appendix bound down by adhesions, but otherwise appearing normal to the naked eye.

(3) Cases in which the appendix is involved in adhesions resulting from disease of the female pelvic organs.

(4) Cases of tuberculous disease with caseous or calcified mesenteric glands. Here one often encounters, in addition, an appendix which is somewhat elongated and kinked, and bound down by adhesions. It is often difficult to determine the sequence of the pathological changes: whether chronic inflammation of the appendix has affected the adjacent lymphatic glands so as to predispose them to tuberculous infection (analogous to the relation between chronically infected tonsils and tuberculous cervical adenitis); or whether a healthy appendix has been involved in adhesions resulting from primary tuberculous disease of the glands in its vicinity.

(5) Cases—usually, but not invariably, associated with visceral ptosis—with so-called physiological bands.

The first four classes of case are liable to become complicated by acute intestinal obstruction; but it is doubtful whether this can ever occur solely as a result of physiological bands.

FOUR CASES OF BAND OBSTRUCTION

In the four following cases, intestinal obstruction by bands occurred as a result of disease in the ileocæcal region.

CASE 1.—Miss A., aged 29, was admitted to hospital suffering from acute intestinal obstruction.

Previous history.—Seven years earlier she had been operated upon for acute appendicitis. No notes of this operation

could be obtained, but the patient stated that a drainage-tube had been employed, and that the wound discharged freely for some days. She had been led to believe that the appendix had been removed. Since the operation she had had repeated attacks of colic, associated with nausea, but rarely with vomiting; during the last three years she had been very constipated, and experienced a constant sense of abdominal discomfort in the intervals between more acute attacks.

The present illness started three days before admission, with severe generalised abdominal pain, at first colicky, but later becoming constant in character. Vomiting had occurred at frequent intervals, and the bowels had not acted. On admission the tongue was dry and coated, the breath offensive. Temp. 101° F., pulse 120. The abdomen was much distended, universally tender, and peristalsis was visible. There was an old operation scar, 3½ in. long, below the umbilicus, and 1 in. to the right of the middle line. An enema administered shortly after admission was returned clear, though a small amount of flatus was passed. An immediate laparotomy was performed.

Operation.—Under open ether anæsthesia the abdomen was opened through a left paramedian incision, well clear of the old scar, where interference by adhesions was to be anticipated. Distended, boggy, and inflamed coils of small intestine, coated with lymph, at once presented through the wound. After careful packing-off with hot swabs the cæcum was sought. The greater omentum was adherent to the back of the old scar along its whole length, and when freed the cæcum could be brought into view. The cæcum was neither distended nor bound by adhesions. The stump of an appendix about ½ in. long, greatly thickened in all its coats, but not adherent, was discovered in the ileo-cæcal position. The cause of the obstruction was then looked for, and a thick cord-like band was encountered. It was attached in front to the abdominal wall immediately above the symphysis pubis, and extended upwards and backwards across the abdomen to end at the root of the mesentery where it crosses the duodenum. Upon this band several coils of small intestine had become impaled and obstructed. The band was divided at its extremities and

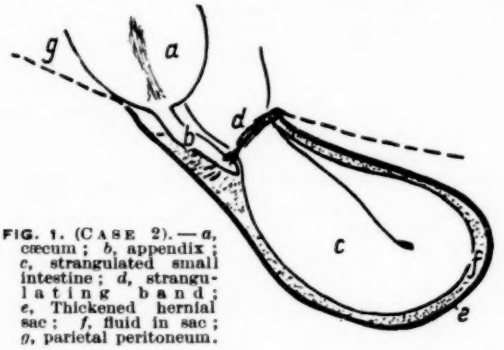

FIG. 1. (CASE 2).—*a*, cæcum; *b*, appendix; *c*, strangulated small intestine; *d*, strangulating band; *e*, Thickened hernial sac; *f*, fluid in sac; *g*, parietal peritoneum.

removed. The appendix stump was excised and the abdomen closed.

The patient made an uninterrupted recovery.

CASE 2.—B. C., a collier aged 60, was sent to hospital suffering from a strangulated inguinal hernia.

History.—He had had a right inguinal hernia for many years; it had always been reducible, easily controlled with a truss, and had never previously caused much trouble. Thirty hours before he was seized with sudden severe pain in the right groin and lower half of the abdomen, and had vomited repeatedly since. He walked unaided into the hospital ward.

On examination he was found to be a well-preserved man for his years. Temp. 97° F., pulse-rate 88. There was an elongated swelling along the whole length of the inguinal canal, exquisitely tender and without impulse on coughing. The margins of the external ring could readily be palpated; the tip of the little finger could be inserted within the ring, when the swelling could be felt extending as far as the ring but not caught in it.

Operation.—Under open ether anæsthesia the usual incision for an inguinal hernia was made and the canal opened along its whole length. A tense greatly thickened hernial sac was exposed and freed from its coverings. The sac was opened and about 2 oz. of thick greenish-brown offensive fluid escaped. Within the sac there was a strangulated loop of small intestine about 6 in. in length. The strangulation was caused by a band which crossed the sac just distal to its neck. The band was divided, the liberated intestine drawn further out of the abdomen and examined. It was swollen, deeply discoloured, and showed several patches of ulceration and gangrene. The affected loop was resected, and the continuity of the gut restored by an end-to-end anastomosis. The sac was now examined more closely, and the appendix was found to be lying within the neck of the sac and bound to it by adhesions. The band which had caused the strangulation was attached

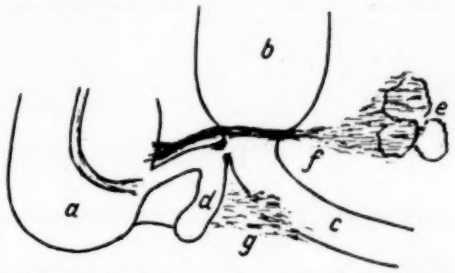

FIG. 2 (CASE 4).—*a*, cæcum; *b*, distended small intestine; *c*, collapsed small intestine; *d*, appendix; *e*, mass of calcified glands; *f*, strangulating bands; *g*, adhesions.

at one end to the tip of the appendix. The appendix was freed and removed, and apart from the adhesions showed little departure from the normal. The cæcum and anastomosed small intestine were returned into the abdomen without difficulty. The sac was excised and the wide neck closed with a continuous suture. The inguinal canal was then reconstructed after the method of Bassini.

The wound healed by first intention and the patient made a good recovery. On the sixteenth day after operation the left leg became swollen. Four days' rest and elevation of the limb caused the swelling to subside, but it showed some tendency to recur when the patient was allowed up.

CASE 3.—Mrs. D., aged 32, was admitted to hospital for severe abdominal pain of 12 hours' duration. There was no history of any previous abdominal trouble. The pain had developed suddenly and was at first cramp-like and confined to the epigastrium, but later radiated over the whole abdomen. She had vomited twice before coming into hospital and once shortly after admission.

On examination: Temperature and pulse were normal. The tongue was coated. Examination of the abdomen revealed well-marked tenderness over the right iliac region. There was no muscular rigidity, nor could any other physical signs be elicited. An enema administered was returned clear. Early acute appendicitis was suspected and the patient was observed for a few hours. The pain continued to be severe without becoming localised and the vomiting recurred. Laparotomy was therefore performed.

Operation.—The abdomen was opened through a right paramedian subumbilical incision. The cæcum was distended and very mobile. In the mesentery, close to the ileocæcal angle, there were three isolated caseous and calcified gland masses. The largest of these was about the size of a walnut. The mesentery was unusually long. There were numerous thin adhesions binding the appendix to the cæcum. The appendix itself appeared to be otherwise normal. A band, attached below to the mesentery and one of the gland masses, stretched upwards and outwards to the abdominal wall, crossing and compressing the ascending colon. The constricting band was divided; the appendix was freed and removed, and the diseased gland masses excised. Other abdominal organs were explored and found to be normal.

The patient made an uninterrupted recovery.

CASE 4.—E. F., aged 37, was admitted to hospital with an acute intestinal obstruction.

History.—During the previous two years the patient had been troubled with attacks of acute abdominal pain associated with vomiting. As a result of these he had been kept off work for several weeks at a time. Two days before admission he was seized with severe pain around the umbilicus which quickly spread over the whole abdomen. The pain subsided after a few hours, but recurred in wave-like exacerbations. There was repeated vomiting. Large doses of castor oil had been self-administered, but the bowels had not acted, and an enema had failed to produce any result.

On admission the pulse-rate was found to be 68, temp. 99° F.; tongue dry and coated. The abdomen was much distended; central peristalsis was visible; loud borborygmi were heard. There was diffuse tenderness over the abdomen, most marked over the right iliac region, where definite muscular rigidity was found.

Operation.—Under ether anæsthesia the abdomen was opened through a right paramedian incision. Numerous

dense adhesions were at once encountered between coils of small intestine and the parietal peritoneum. Some loops of small intestine were greatly distended, while others were collapsed. After freeing some of the adhesions, the cause of the obstruction was traced and found to be a band extending from the cæcum and base of the appendix to a mass of calcified glands at the root of the mesentery. The appendix was then found to be bent acutely upon itself. The knuckle of the bend was adherent to and had perforated the small intestine immediately below the line at which it had been obstructed. The appendix was separated and freed, leaving an opening in the small intestine about the size of a threepenny piece at the point where the ulceration had occurred. The opening was closed by suturing it transversely to the axis of the gut; the constricting band was divided; the appendix was removed. The abdomen was closed without drainage.

There was severe post-operative ileus, and vomiting on the second day after operation. The vomitus was copious and became almost fæculent in character. After the stomach had been thoroughly washed out the vomiting at once subsided. The patient then made an uninterrupted recovery.

These four cases were encountered in a series of 153 acute abdominal emergencies (including 23 cases of acute intestinal obstruction) on which I operated.

CLINICAL AND LABORATORY NOTES

HYSTERECTOMY IN MENOPAUSAL INSANITY

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The excellent effect described by Moorhead and FitzGibbon [1 2] of total hysterectomy on a severe case of menopausal insanity, and the fact that with modern technique hysterectomy has a very low mortality,[3] prompt this note on the results of this operation in 17 cases admitted to the Warwick County Mental Hospital during the five years 1928 to 1932 inclusive. Of these patients 7 were operated on after admission and 10 before, while at least 11 of the total number could be described as menopausal insanities. Total hysterectomy was performed in 10 patients and the subtotal operation in the remaining 7, but, as the Tables show, no appreciable difference in the effect on the mental state was observed between the two operations. The results of operation on the 7 certified patients are shown in Table I., the surgical result being highly satisfactory in each case and physical improvement the general rule.

The three recoveries were expected on clinical grounds, hysterectomy apart. The results in the

TABLE I.—RESULTS OF HYSTERECTOMY ON SEVEN CERTIFIED PATIENTS

Age.	Type of psychosis.	Physical complaint.	Operation.	Time performed after admission (months).	Duration, in months.	Result.
54	Acute depression.	Fibroids and seven years "floodings."	Subtotal.	4	8	Recovery.
52	Confusional insanity; progressive dementia.	Fibroids.	,,	14	14	Died; cardiac failure in one week; local healing good.
66	Agit. melancholia and prog. dementia.	,,	,,	8	17	Still certified; progressive dementia.
49	Acute depression.	Fibroids, "floodings," and cervical discharge.	Total.	1	5	Recovery.
40	Agit. melancholia.	Fibroids.	Subtotal.	5	20	Died uræmia; no mental change.
38	Non-systematised; delusional.	Fibroids, cervical discharge, and menorrhagia.	Total.	6	10	Discharged to friends; no mental change.
51	Confusional.	Fibroids.	,,	2	9	Recovery.*

* Readmitted three years later and died in two months from lobar pneumonia.

TABLE II.—RESULTS IN TEN PATIENTS WITH PREVIOUS HYSTERECTOMY

Age.	Period before admission at which operation was performed.	Operation.	Type of psychosis.	Duration.	Result.
50	3 months.	Subtotal.	Non-systematised; delusional.	3 years.	Discharged to friends; no mental change.
51	4 ,,	Total.	Recurrent mania.	7 months.	Recovery, as in three previous attacks.
53	10 ,,	,,	Agit. melancholia.	1 month.	Died; cardiac failure and exhaustion.
53	12 ,,	,,	,, ,,	4 years.	Still certified; progressive dementia.
45	18 ,,	,,	Recurrent melancholia.	1 year.	Still certified; no mental change.
60	2 years.	Subtotal.	Alcoholic; confusional.	1 ,,	Died; cirrhosis of liver.
57	4 ,,	Total.	Confusional.	18 months.	Recovery.
59	24 ,,	,,	Alcoholic; confusional.	4 ,,	,,
43	Not ascertained.	,,	Agit. melancholia.	2 years.	Discharged to friends; no mental change.
65		Subtotal.	Senile dementia.	2½ ,,	Died; senile decay.

10 further patients who were found to have had hysterectomy performed previous to admission, usually for fibroids and hæmorrhage but in one case for carcinoma, are shown in Table II., together with the time before admission at which operation was performed. Hysterectomy was considered the immediate cause of the attack in the first two patients, for mental symptoms dated from the operation.

These results support the opinion of Strachan and Skottowe,[4] that in psychotic patients the operation of hysterectomy should only be undertaken for a demonstrable pelvic lesion. In no case in this small series could mental improvement be justifiably related to hysterectomy.

I wish to thank Dr. A. T. W. Forrester, medical superintendent of the Warwick County Mental Hospital, and Mr. G. G. Alderson, the visiting surgeon to the hospital, for permission to publish this note.

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TWO CASES OF INFLUENZAL PNEUMONIA TREATED BY INJECTION OF CONVALESCENT SERUM

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IN view of the demonstration by Smith, Laidlaw, and Andrewes [1] that the ætiological agent of influenza is filtrable and can infect ferrets, and that the serum of convalescents can protect the animals against infection, two cases of influenzal pneumonia treated by the injection of convalescent serum during the epidemic last winter are of some interest. The serum

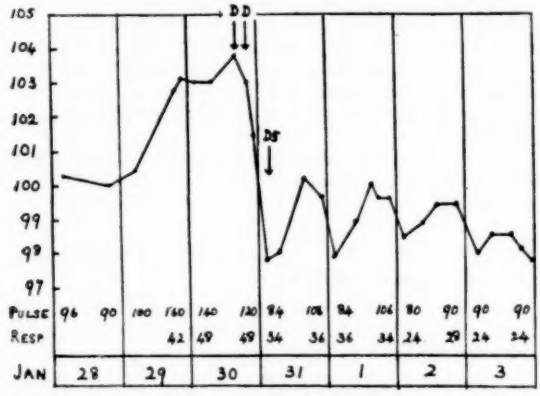


FIG. 1 (Case 1).—Temperature chart. 10 c.cm. serum D injected at D; 5 c.cm. injected at D 5.

appeared to have a specific effect in that the temperature began at once to fall, along with considerable amelioration in the symptoms. Similar results were obtained by McIntosh [2] in 1918, but for some reason convalescent serum has not been at all widely used in recent epidemics. The details of the cases were as follows.

CASE 1.—Mrs. A. In the isolation block, Queen Charlotte's Hospital, under the care of Mr. C. Lane-Roberts. Pregnant (full term). Aged 27. Well until evening of Jan. 26th when fever began. Jan. 28th: delivery (uncomplicated); temp. 100·2° F.; rhonchi over both sides of chest. Jan. 29th: much worse; cyanosed, dyspnœic; patchy dullness over both lungs. Jan. 20th: condition grave, extreme cyanosis, stertorous respiration. At 4 P.M. temp. 103·8°, resp. 46, pulse-rate 140. 80 c.cm. of blood removed by venesection and 10 c.cm. serum D

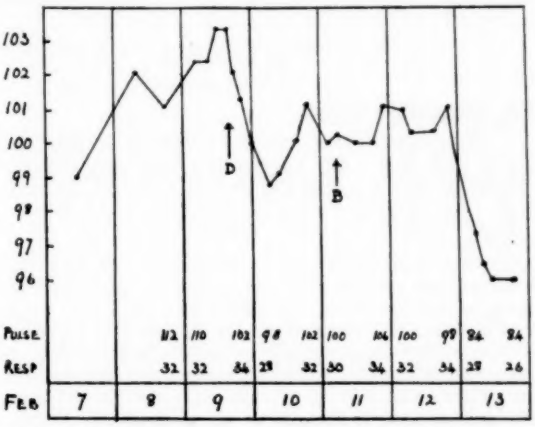


FIG. 2 (Case 2).—10 c.cm. of serum D injected at D; and 10 c.cm. serum B injected at B.

given intravenously. At 8 P.M. condition was slightly improved and another 10 c.cm. serum D was given. Condition began at once to improve and patient slept well all night. Jan. 31st: 10 A.M., temp. 98° F., resp. 32, pulse, 84; dyspnœa and cyanosis had both gone; cough loose with mucopurulent sputum. A further 5 c.cm. of serum D given intravenously. Despite a tendency to evening temperatures of 100° F. the patient made an uninterrupted recovery.

CASE 2.—Mrs. B. Under the care of Dr. Alan Massey, of Hanwell. Aged 36. Pregnant (5 months). Feb. 1st: general malaise. Feb. 2nd: cough, no lung signs. Feb. 7th: better. Feb. 8th: became much worse; severe cough with mucous râles and bronchial breathing over both lungs; dyspnœic and sleepless. Feb. 9th: condition worse; marked dyspnœa and pain over left side of chest. At 5 P.M. temp. 103·4° F., resp. 34, pulse 111. 10 c.cm. serum D given intravenously. At 9 P.M. condition had improved considerably. Dyspnœa had gone and expectoration free. Temp. 99° F. Slept well all night. Feb. 10th: general condition much improved. Feb. 11th: 10 c.cm. serum B given intravenously; slept well. Feb. 13th: temp. subnormal. Recovery uninterrupted.

The serum came from two donors whose history was as follows:—

(1) D. Had had sore-throat from Jan 9th to 13th, with a maximum temperature of 100·8° F., with spasmodic cough and pain along the bones. 100 c.cm. blood removed on Jan. 30th.

(2) B. Had had similar symptoms to the above from Jan. 29th to Feb. 5th. 200 c.cm. blood removed on Feb. 9th.

Specimens of sputum from both cases were obtained before serum treatment was begun. On being plated on horse blood-agar plates and incubated aerobically, they yielded very mixed cultures of non-hæmolytic streptococci and diphtheroids. No pneumococci or Pfeiffer's bacilli were isolated.

Both cases reacted in very similar and very dramatic fashion. The temperature began at once to fall, reaching normal within 12 hours. The pulse-rates fell coincidently. Dyspnœa and pain both disappeared

* Working with a grant from the Medical Research Council.

[1] Smith, W., Andrewes, C. C., and Laidlaw, P. P.: THE LANCET, July 8th, 1933, p. 66.

[2] McIntosh, J.: Studies in the Ætiology of Epidemic Influenza, Med. Res. Coun., Spec. Rep. Series 1922, No. 63.

and did not return. In Case 1 the severe cyanosis also disappeared. Expectoration became easier and the secretion more copious. But most remarkable of all was the improvement in the general condition, so that both patients were able to sleep the whole of the night following the initial injection of serum. The physical signs over the lungs indicated that the pneumonic condition underwent rapid resolution after the initial fall of temperature. There can be little doubt that in Case 1 the patient was moribund at the time treatment was begun, and that the illness in Case 2 was shortened.

No further cases were available for study, so that the correct dosage of serum or the best time to bleed the donors have not been investigated. It is probable that the doses employed were too small. This certainly applies to Case 2. In the absence of any method of making an antiserum artificially it seems that the employment of convalescent serum in influenzal pneumonia merits further trial.

REVIEWS AND NOTICES OF BOOKS

The Digestive Tract

A Radiological Study of its Anatomy, Physiology, and Pathology. By ALFRED E. BARCLAY, O.B.E., M.D., D.M.R.E., Lecturer in Radiology, University of Cambridge. London: Cambridge University Press. 1933. Pp. 396. 36*s*.

Dr. Barclay modestly describes this work as "the result of many years of groping," and it has a human element that makes it a pleasure to read. The book as a whole falls into three main divisions. The first part provides a careful study of radiological technique, using the word in its fullest sense. In this section are considered radiological risks and their avoidance, the routine and technique of an alimentary X ray, and the proper methods to be followed in the screening and palpation of the abdomen together with some shrewd comments on the proper way of drafting the final report. What Dr. Barclay calls precepts for examinations are summed up in a series of "do's" and "don'ts," which might with profit be learned by heart by every aspiring radiologist. The necessity for following a well-tested routine in every case is rightly stressed. "Don't be 'jockeyed' out of your routine by anybody," says Dr. Barclay, and again, "Routine may cause apparent delay but unless there is some urgent reason to the contrary the radiologist is well advised to insist that his routine shall take its course." Having arranged his tools and described the most efficient way to use them, he proceeds to discuss the radiographic examination of the alimentary tract. Diagnosis by this means was handicapped in the early days of radiology because so little was known of the range of variation in the appearances presented by healthy organs. Partly, no doubt, in remembrance of this difficulty nearly a third of the present volume is devoted to the anatomy and physiology of the alimentary canal as seen by the radiologist, and this section constitutes the most complete and authoritative survey of this subject we have seen. Dr. Barclay dislikes the word "normal" in this connexion; "there is no such thing as 'normal'; an alimentary tract may approximate to the average but there is no fixed standard of normality." The anatomy of the stomach and the factors influencing its form and position are studied in detail and so the reader is brought to a short but very interesting chapter on the effects of posture and respiration on other abdominal viscera. The consideration of the mobility and adaptability of the viscera follows as a natural sequence. Dr. Barclay's conception of living anatomy is one of mobility, of complete absence of fixed points, which, as he shows, would necessarily interfere with nature's mechanism. He emphasises that normal abdominal viscera have neither fixed shapes nor fixed positions, and that moreover profound change may be caused not only by mechanical forces but also by mental influences. His hope that his work will do something to prick the last bubble of "fixation" and similar operations may well be realised. The movement of the food from mouth to anus is passed in review in a concise manner and the mechanism of "mass" movements and its bearing on constipation carefully noted.

Having thus defined the condition of the digestive tract in health, Dr. Barclay proceeds to its appearance as presented to the radiologist in disease. Each pathological condition is carefully described, discussed, and adequately illustrated. In passing it may be noted that the many beautifully produced illustrations drawn from various sources, with which the book abounds, have obviously been carefully selected. They constitute a valuable atlas of the radiological appearance of the alimentary canal in health and disease. This section bristles with useful tips and sound conclusions drawn from wide experience. A small criticism may be made on the subject of gastritis and its diagnosis from the X ray appearance of the mucosal striæ. We believe that radiologists are getting more accurate results from what Dr. Barclay aptly calls "this new and precise method of investigation" than he is prepared to admit. Dr. L. A. Rowden has collaborated in the chapter on the gall-bladder and the association is a happy one. Here we suggest that cholecystography is a better name than the "dye test" or the Graham test.

A series of appendices form the third and concluding section of the work. One of these deals in great detail with the organisation and equipment of an X ray department and should prove invaluable to any one building a new or remodelling an old radiological unit. There are also a good bibliography and indices.

The book is thoughtful and practical, at times philosophic, always instructive, and is admirably produced.

Problems in the Education of Visually Handicapped Children

By RALPH VICKERS MERRY, Consultant in Child Guidance, Dayton, Ohio. Harvard University Press. 1933. Pp. 243. 13*s*.

IN this book a blind child is defined as one whose vision, after correction, is insufficient to permit him to be educated by visual methods; a partially seeing child is one whose corrected vision is insufficient to permit him to be educated in the ordinary grades, but who can profit by the methods and apparatus used in sight-saving classes. There are said to be about 14,400 blind children under 20 in the United States of America, and it is estimated that there are 50,000 partially seeing children who should be in sight-saving classes, of whom less than 5000 are actually enrolled. So far as the blind are concerned the recognised essential in their education is the teaching of the Braille type. It is noteworthy that during the greater part of the nineteenth century

there was no general agreement as to the best form of embossed type, and it was not until 1920 that the "type war" was finally set at rest in America by the adoption of a universal Braille system. At present there are 54 State institutions for the blind in the United States and seven private schools receiving State help, but ten States still have no compulsory education laws affecting blind children. There are also a few public schools where the experiment has been tried of having special classes in certain subjects such as reading, writing, and arithmetic for blind pupils, the rest of their work being carried on in the ordinary class-rooms. The relative advantages of these two plans is discussed in this book, the conclusion being that there is room for both.

The sight-saving classes for weak-sighted children date from 1913, and are modelled on the myope schools of the London County Council. In January, 1930, there were 350 such classes with an enrolment of 4829 pupils in 93 cities and 2 counties, but in America as in England, many of these children are still being educated in residential blind schools. One of the most difficult problems is how to educate a child with sight so defective as to qualify him for a sight-saving class where no such class is available. Another is how to deal with myopes whose corrected sight is good but who run the risk of its deteriorating in later life; the same applies to those with restricted fields, as in some cases of optic atrophy and some of retinitis pigmentosa. Should such children be taught with the blind? When the number of weak-sighted children in a blind school is considerable the obvious solution is to establish special classes adapted to their needs. Although sight-saving classes are by no means beyond criticism, Mr. Merry holds that they are generally more progressive than the residential institutes for the blind.

The book goes on to discuss pre-school and kindergarten training for the blind, the relative advantages of education in residential schools and in day-school classes, the need of the sight-saving classes, the health problems peculiar to these children, and the importance of simple physical training, and especially the correction of the postural defects, common in blind children, through systematic treatment and exercise. How far such exercises should be modified in the case of high myopes is a question that is not discussed. Later chapters deal with the development of intelligence tests and the problems of the mentally subnormal blind child, "blindisms" or tricks apt to be associated with blindness, sex problems, and speech disorders. The need for organised guidance on individual lines is stressed, and the special qualifications needed by teachers of the blind and of the sight-saving class are considered. The annotated bibliography that completes the book demonstrates the amount of attention which is now being devoted to these subjects in America.

Organs of Internal Secretion

Their Diseases and Therapeutic Application. With a chapter on Obesity and its Treatment. Fourth edition. By IVO GEIKIE COBB, M.D., M.R.C.S. London: Baillière, Tindall, and Cox. 1933. Pp. 303. 10*s.* 6*d.*

THE literature of endocrinology has grown so overwhelming during the last 20 years that few workers can hope to keep abreast of more than one branch of the subject. The busy practitioner is so bewildered at its mass that too often he does no more than glance at the innumerable brochures sent out by manufacturers of glandular products. He should appreciate the provision of unbiased indication of the present state of our knowledge such as is provided in this book now in its fourth edition, which does not enter at all deeply into the experimental evidence on which this knowledge is based. In this edition the work has been thoroughly revised and largely rewritten, and chapters on infantilism and obesity have been added. If the style errs a little on the side of chattiness, many will find it the more readable on that account.

A Short History of Dentistry

By LILIAN LINDSAY. London: John Bale, Sons and Danielsson. 1933. Pp. 88. 3*s.* 6*d.*

Mrs. Lindsay has already established herself as an authority on the history of dentistry, and in this little book she shows that her knowledge of the subject is not less wide than that of Guerini or Weinberger. In 88 pages she has managed to convey an extraordinarily complete survey of the evolution of dentistry. It is a fascinating picture which shows that while from early times there had been progressive development, it was not until the last century that striking advances were made which placed dentistry on a secure footing and enlarged its scope to cover, on the one hand, scientific investigations into physiology and pathology, and on the other the practice of an art which has æsthetic as well as hygienic value. The use of fused porcelain for artificial teeth and the discovery of vulcanised rubber as a denture base were perhaps the two most notable changes in dental practice. This brochure should be widely read, for few members of the medical or dental professions know much about the evolution of dentistry.

The Injured Workman

By G. F. WALKER, M.D., M.R.C.P., with the collaboration of J. Harvey Robson, Barrister-at-Law, R. E. Jowett, M.D., Ch.B., D.L.O., Stanley Ritson, M.B., M.S., B.Sc., F.R.C.S., and John Foster, M.A., M.B., F.R.C.S., D.O.M.S.; and with a foreword by W. H. Maxwell Telling, M.D., B.S., F.R.C.P. Bristol: John Wright and Sons, Ltd. Pp. 190. 1933. 6*s.*

THIS book is apparently intended both for the legal and medical practitioner. The first chapter on law is clearly expressed and will appeal especially to the doctor. Perhaps greater emphasis should have been given to the fact that compensation under the Workmen's Compensation Acts is only given for actual loss of earning capacity: this is a fact that is frequently misunderstood by the practitioner, and in fact seems to have been misunderstood by one of the contributors to this volume, who says on page 118: "compensation is awarded . . . secondarily for deformity and pain." It cannot be too clearly emphasised that no compensation is awarded for pain but only for earning incapacity, which may or may not result from the injury which causes pain. On general medicine and surgery there is much in this book that is likely to help the doctor to determine whether a patient is entitled to compensation. The balance between injuries to various regions of the body is not however very well maintained, for over a third of the medical part of the book is devoted entirely to injuries of the eye. This section is admirably compiled by a writer who has obviously had

considerable experience of industrial injuries to the eye, but it must be borne in mind that only a very small proportion of the total number of accidents that occur affect the eye. In a series of 7500 consecutive cases of injury for which compensation was paid by a large insurance company, less than 1 per cent. of these injuries was to the eye, whereas more than half of the injuries were to the hand, a subject that is not even mentioned in this volume. This is a grave omission. The book is clearly written and admirably printed; it has a short bibliography and a complete index.

NEW INVENTIONS

ADDITIONS TO THE McCARTHY TRANSURETHRAL ELECTROTOME

WHENEVER the method of perurethral resection is used in the treatment of certain malformations of the prostate, it is essential that the operation be performed with the greatest possible accuracy, for the loop activated by diathermic current cuts the tissues with a speed greater than any scalpel.

The instrument now described is of the type introduced to surgery by J. F. McCarthy, but some important additions have been made to it with the object of enabling it to be used with more facility and greater precision. In the first place, it is constructed to allow of the telescope being moved within the sheath, independently of it and also independently of the cutting loop (Fig. 1). The principle of transurethral resection of the prostate by McCarthy's method demands that this loop is placed just over the far side of that portion of the prostatic crest which it is desired to remove. When so placed, the loop itself is, of course, hidden behind the obstruction; when there is any considerable hæmorrhage it is difficult to ensure that this manœuvre has been carried out with the accuracy which is essential to the success of each cut. In this modified electrotome the most important advantage gained by the independent mobility of the telescope is to facilitate this procedure; this is effected in the following manner.

FIG. 1

When the loop has been placed as nearly as possible in the position to cut (Fig. 2), then the telescope is advanced so that the loop and the tissues in contact with it, which were previously seen in the distance, are now brought into very close view, so that the relative positions can be inspected and adjusted with the greatest precision (Fig. 3). Immediately before making a cut the telescope is released and automatically clears itself so that no electric short circuit is possible. On conclusion of cut the loop is in position indicated in Fig. 4.

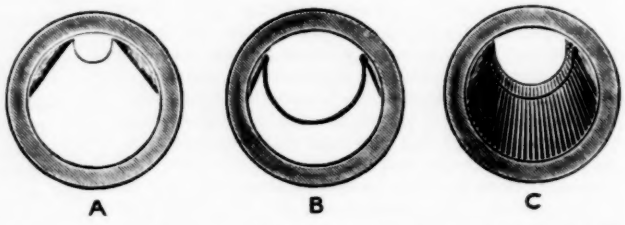
FIG. 5

The independently moving telescope has a second use. Before beginning the treatment of prostatic enlargement it is clearly desirable to have some record of the size of the gland. One important measurement is that of the length of the prostatic urethra, from the verumontanum to the crest of its intravesical projection. To measure this the sheath is placed so that the verumontanum is just visible; in this position it is held steady and the telescope is now advanced until the bladder entrance is reached, each centimetre of movement being recorded by a notch.

When the measurement has been recorded, a further use may be made of it if desired. For the instrument can be set to make a definite length of cut on each occasion, the setting chosen being obviously always less than the total length of the prostate above the verumontanum. This is, of course, only one method of ensuring that each cut which is made is never of dangerous length.

Mr. Schranz, of the Genito-Urinary Company of London, who has so skilfully carried out my ideas in this respect, has also made another very valuable improvement in the design of the loop itself. He has added above it a fine strip of copper, thus turning the half-circle loop into an ovoid. As in the McCarthy instrument it is only the half-circle loop which cuts, but the copper strip, which lies against the roof of the instrument, ensures that the shape of the loop itself cannot become distorted (Fig. 5), thus making it practicable to resect pieces of tissue relatively larger than has hitherto been possible. This is an important achievement, for I believe that in all perurethral operations large instruments should be avoided, and that they should be of as small a calibre as is consistent with efficiency. The one here described is of 26 Charrière scale. The maximum length of cut is 3·5 cm. and the minimum is 0·75 cm. Other variations in size and length of cut can be constructed.

FIG. 2 FIG. 3 FIG. 4



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THE LANCET

LONDON: SATURDAY, AUGUST 5, 1933

THE FINANCIAL SITUATION OF THE LONDON VOLUNTARY HOSPITALS[1]

THE annual statistical review for 1932, which is published this week by King Edward's Hospital Fund for London, provides reassuring information as to the financial support which the hospitals have been receiving. The year was one of marked financial depression, a depression made all the harder to bear because sporadic promises of better things seemed seldom or never to materialise. None the less, during 1932 the voluntary gifts to the hospitals, other than legacies, increased when a drop might well have been anticipated, and further there was a gratifying addition to the amount received from the general body of subscribers. The situation was also assisted by an increase in the grant from the King's Fund in aid of maintenance. The total voluntary gifts in 1932 amounted to £2,173,000, receipts for building endowment being included, while the money received from patients showed an advance on all previous figures, reaching a total of £1,463,000. The total income of the 145 hospitals covered by the review amounted to £3,826,000, being, it is true, less by £3000 of the total for the previous year, but in 1931 more money was received from legacies.

The vast figures prove alike the far-reaching scope of the work done by the voluntary hospitals and the appeal which they make to the public mind. They show that while the work in London progresses, receipts both of voluntary gifts and of patients' payments are keeping pace with the increased maintenance expenditure. Now the increase of maintenance expenditure per patient forms a practical proof that the quality of the treatment has been improving, and the conclusion drawn in the review, based on the figures, may be quoted for its suggestiveness. "The advances in therapeutic knowledge and skill," the words run, "have inevitably led to demands from other sections of the community that they should not be debarred from the benefits of the progress, and the voluntary hospitals, in adapting themselves to the changing conditions brought about by the ever-developing coördination of social life in this age, have met the necessities of the case by enlarging their field of service, which now includes not only the indigent sick, but also a large body of wage-earners who make substantial contributions either direct or through contributory schemes, and also persons of moderate means who are admitted to the private pay-beds." This means that the status and significance of the voluntary hospitals are better appreciated than ever; in a changing society they have adapted themselves to the changes, and the modern fusion of classes, accompanied by a basic redistribution of wealth and poverty, has led to a growing spirit of public responsibility—more persons are benefited as more feel their indebtedness. Further, notwithstanding the increasing volume of hospital work, economies all round have been effected; the total running expenditure has been reduced and the aggregate of surplus income over expenditure has mounted. An interesting table in the review summarises the fortunes of individual hospitals, showing that some of them have been placed in more difficult positions than others during the past five years, while the surpluses and deficits in 1932 are capriciously distributed among them. But as far as London is concerned it would seem that the economic crisis has not had the sad effect on hospital finances that was widely anticipated. Indeed, increased prosperity is looked forward to on reasonable grounds.

There is food for thought in all this, and many people are thinking, and thinking seriously. If the satisfactory maintenance of the voluntary hospitals is achieved in recognition of their work as centres of progress and education, as the resorts of the sick and injured where forms of treatment can be supplied which are outside the range of anything save institutional therapy, then the services of the voluntary hospitals cannot be exaggerated. But should the economic position of the voluntary hospitals come to derive its strength from catering to the public in situations where the personal and domestic care supplied by the practitioner could meet, and could better meet, the wants of the suffering, an anomalous issue will occur, which will benefit neither medicine nor the public. These things should remain in all persons' minds. The great educational institutions must not become training grounds for recruits whose proper opportunities for services are being unduly diminished by the institutions, nor must the public lose the advantages derived from the intimate associations of the patient with his personal doctor. From these associations there have been and there will always be derived the most pertinent advantages which medicine can possess for its progress and extension. Those who control the policies of the hospitals—whether voluntary or municipal—cannot at this time be unaware of the difficulties to which allusion is made. Those difficulties seem to show a tendency to increase, which is not so pleasant to contemplate as the rising prosperity of hospital finance.

[1] Statistical Review of the Work and Finance of the London Voluntary Hospitals for the Year 1932. Offices of the Fund, 10, Old Jewry, London, E.C. 1s.

EUGENICS IN GERMANY

CERTAIN eugenic proposals put forward in Germany were discussed in our issue of June 10th by the secretary of the Eugenics Society, who pointed out how wide was the gulf between them and the measures advocated by eugenists in England. At that time it seemed possible that they were no more than the suggestions of a more or less irresponsible extremist; now, however,

any doubts of the kind have been resolved. The actual bill which is sponsored by the German Government is available;[1] it provides for compulsory sterilisation and leaves room in its application for the gravest abuse of human rights.

It would be surprising if, in the present state of Germany, learned support were lacking for such a measure. In the union between politics and science the latter has become the pliant partner, and in the writings of several professors, collected in a special eugenics number of the *Deutsche medizinische Wochenschrift* (July 14th), the new relationship is celebrated with fervid candour. Many of the contributors are men of high reputation; all are strong in the faith for those ends and measures which Galton advocated and which English eugenists pursue. But the expression of these aims is far too often associated with gross overstatement of our present knowledge of heredity, a disregard for the individual human being, and a willingness to act upon racial prejudice. The divergencies from what might be called laudable eugenics are of significance. Contraception in its modern usage is reprehended on grounds of general and national morality. Women must recognise that they have no place in competition with men, that their only true purpose in life is to bear children for the State; the disparity in birth-rate between Germany and its Slav neighbours demands this, if Germany is to survive and the German is to carry out his cultural mission. There must be true Germans, close to the Nordic ideal, to colonise the border countries which may be won by Germany. This Nordic ideal must not be narrowly regarded as a matter only of physical qualities: the character and capacity which make the Germans superior to other national groups are sometimes to be found conjoined with non-Nordic somatic attributes, but a study of the family origins of such Germans will prevent any confusion with the foreign, inferior races. The members of such races, especially Jews, are to be excluded from all but servile occupations, since they would otherwise have opportunities, as doctors, teachers, scientists, and leaders, to contaminate the German people; infiltration by inferior peoples through marriage is to be absolutely forbidden. The former liberal or Marxist concern for the individual must give way to a regard for the State, the family, posterity; such considerations justify compulsory sterilisation for the mentally defective, the manic-depressives and the schizophrenics, the chronic alcoholics, the criminals. The latter may be offered the alternatives of incarceration or sterilisation. Whether sterilisation should be made compulsory was still a matter for discussion, we believe, when these articles were composed; some of the writers deprecate overt compulsion but support an indirect compulsion by withholding from recusants all public assistance. Emphasis is laid on the necessity for a wholehearted eugenic propaganda, penetrating all instruction, and the three rules for this are set forth plainly. (1) The appeal must be to a few simple, primitive lines of thought. (2) The basic ideas propagated must be represented as obvious, unshakable, proved to the hilt. (3) These few basic ideas, always in exactly the same form, must be continually and interminably hammered into the consciousness of the masses. Physicians and savants are adjured to overcome their feelings that such arts are unworthy of them, and the articles themselves, with their slogans, assumptions, and appeals, show that such self-control is possible.

It is not easy to distinguish between the sounder eugenic aspects of Nazi policy and the more odious forms in which the social spirit of Germany is now manifesting itself, by persecution and chauvinism. The policy is highly integrated. Its espousal by these German physicians and geneticists may in part be attributed to their explicit preference for a form of society in which intelligence and humanity are less respected than ruthless devotion to the State. Some of the provisions of the new German law, when put into action, will no doubt result in valuable genetic data and some social benefit. But these will not necessarily outweigh the harm that will be done. It is difficult to excuse the geneticist who can declare that "we have a perfectly assured basis for all conceivable political measures, dealing with population," or that "with regard to practically all the diseases that interest us, because of their frequency, we know for certain whether they are hereditarily determined or not, and to what extent." Upon these misstatements and exaggerations, and others of older date concerning racial differences, there is being constructed a system of compulsory interference with the liberty to propagate, the total effects of which, though difficult to foresee in detail, can scarcely be other than bad. It is fortunate that eugenists in England have shown more restraint and critical honesty, and that social measures in this country are informed by a juster regard for the individual human beings who make up the State and for whose benefit the State exists.

[1] Summarised in the Times, July 27th, p. 11.

MEDICINE AND THE DEFENCE SERVICES

IT is well known that since the war the medical departments of the Defence Services have been under great difficulties of personnel, carrying on largely with the assistance of retired officers or of doctors employed on short term contracts. As certain of these could not be employed overseas, the regular officers of the Services have been retained abroad for an unfair proportion of their time, and, despite many efforts to the contrary, have not had good or sufficiently continuous opportunities for adding to their knowledge by post-graduate study. Improvements in the rate of pay have been made more than once of recent years, but their failure to relieve the situation proved that conditions in the Services rather than the pecuniary returns offered insufficient appeal. Accordingly in May, 1931, the Government set up an authoritative Committee under the chairmanship of Sir WARREN FISHER, with the reference to investigate the causes of the shortage of officers and nurses in the medical and dental branches of the three

Defence Services, and to make recommendations. The medical members of the Committee were Sir ARTHUR GASKELL, medical director-general of the Navy, Sir HAROLD FAWCUS, director-general A.M.S., Air-Commodore J. C. MCINTYRE, director of medical services, R.A.F., Prof. G. E. GASK, and Dr. A. M. H. GRAY. The occurrence of the financial crisis later in 1931 led to suspension of the sittings of the Committee, but not before they had received representations from the British Medical Association regarding the conditions in the three Services, as well as a considerable body of evidence from many medical schools, and from members of the Board of Admiralty and of the Army and Air Councils who were responsible for the respective personnels. Further, all the Government departments concerned furnished written information, so that the Report, as now submitted, has been made under unexceptionable opportunities for eliciting the facts.

From an analysis of the evidence it can be seen that the Committee concluded that the economic opportunities were to some extent a bar to recruiting, but that the belief that professional opportunities would be lacking for the officers had a more deterrent effect. The Committee accordingly considered it of the first importance to correct that impression authoritatively, as far as it was proved to be wrong, while, where it was found to be right, to make recommendations for the removal of professional disabilities. The suggestions made from the medical schools with regard to the professional outlook, regarded in their extreme form, amounted to saying that life in the Services offered small scope, with the implication that no young medical man with pretensions to professional keenness should enter them. As allegations of this character were pressed upon the Committee, they invited two medical members of their body, Prof. GASK and Dr. GRAY, to investigate personally the matter, and the scrutiny of these two authorities extended to all types of posts in the three Services. Taken as a whole their findings refuted the allegations. While allowing that the young graduate in medicine with ambitions to reach the top of the tree might not select for a career one of the Defence Services, they advised that in all three a good field was to be found for specialist work. With the Army, general and tropical medicine, surgery, pathology, and hygiene could all be fully pursued, while the special appointments in the last subject were comparable to the post of M.O.H. in civil life. In the Navy they point in particular to the chances of good ophthalmological work; while regarding the Air Force, where similar attention must be paid to ophthalmology, they point to the need for research in the medicine of aviation. Their general conclusions were that the opportunities offered to the officer in the Defence Services of practising a special subject are good, but hold these opportunities to be "somewhat severely restricted by limitations in the period of career during which they are available and by the intermittency of employment." The Committee accepted these views and conclusions, and add that on the economic side the career in the Services suffered from certain definite and common disadvantages. It was too short; officers retired relatively young from the middle ranks, could not educate their families satisfactorily on their pensions, and they could not easily obtain good civil employment. Promotion was too slow and too few officers could reach the higher ranks. The large amount of overseas service or service afloat and the frequency of moves were also disadvantages. To remedy these things their recommendations are made.

The Report is excellently clear in its message. Starting with the broad conclusion that the career in the Services must be improved materially, both in the opportunities it provides for professional work and in the economic advantages offered, it is found that this dual improvement can only be effected by reorganisation. And, in their view this can be brought about without any increased charge on the Exchequer. It is proposed to reorganise the Services on the basis of a reduced total establishment of officers by the elimination of posts held to provide insufficient professional work. Professional opportunity will be improved in the reorganisation by ensuring that those officers who make these Services their life career will be allowed to specialise, and that the specialists will be enabled to spend a considerable part of their career in practising according to their particular equipment. On the economic side the plans for reorganisation should enable a larger proportion of officers to prolong their official career and reach the higher ranks, and therefore the larger pensions. Thus in the Army the rank of lieutenant-colonel will normally be reached about the age of 42, instead of about 48 as under the present organisation, and that of colonel about 50, instead of about 53. Moreover, a large majority of officers will in future be enabled to reach the rank of colonel, and thus to retire with the larger pension of that rank. While no alterations in the pay scale, except certain limited adjustments, are offered, it is held that the increase in emoluments resulting from the proposals amounts to an average of nearly £150 a year throughout the period of an officer's career between the ages of 35 and 50. The estimate is based on the revised Army career, which it is suggested should be the pattern. As the period between the ages of 35 and 50 is that when the responsibility of parents is the greatest, a substantial inducement to join the Services is thus put forward. The Committee emphasise the duty laid upon the employing departments not to enter more officers with the prospects of life career than is justified by the number of higher posts that will be available, but at the same time they consider that the present higher establishment is unduly restricted. But with the increase which is contemplated in the higher establishment the proportion of senior to junior posts will remain in their opinion too small to allow of all recruits to the Services being entered for a life career. A margin of the non-permanent will be required, and they propose that officers in the first instance should be chosen for short service, from whom a certain proportion can be retained, under increased opportunities for promotion. Thus a normal short service period in all three

Services will continue of five years' duration, on the completion of which a gratuity of £1000 will be paid. The committee are satisfied that the scheme of reorganisation will place a career in the Services on a favourable basis as compared with competing civil employments, while they desire to make it clear that the improvements which their proposals would effect as regards future entrants must be examined by the departments in the interests of existing officers; that is to say, the increased opportunities of promotion must be equitably distributed among them.

ANNOTATIONS

A VALUABLE AMALGAMATION

PROPOSALS for the amalgamation of the Ross Institute and Hospital for Tropical Diseases with the London School of Hygiene and Tropical Medicine have been issued in memorandum form from the Ross Institute by its chairman, Sir Charles Campbell McLeod. The memorandum states succinctly the advantages that will accrue both to the school and the institute under a scheme of joint endeavour. That some such amalgamation would take place was anticipated, for shortly after the death of Sir Ronald Ross, when the Goldsmiths' Company was considering the making of a grant to the institute, the question was raised whether its activities did not overlap with those of the London School of Hygiene and Tropical Medicine. Discussions at once took place between the presiding authorities of both bodies; from the beginning it was made clear that the school, so far from wishing to interfere with the work of the institute, would give to that work its fullest support both for its own sake and as a memorial to Ross. Sir Charles McLeod goes briefly into the origin of both bodies, and includes an eloquent testimonial to the exertions of the late Sir William Simpson, both in India and at home, with the object of elucidating the problems of malaria, as well as to his enthusiastic devotion to Ross. The fame of Ross will be carefully preserved in the forthcoming fusion of work at the London School, and it may be remembered that his name already stands carved on the front of the school among the immortals of tropical medicine and hygiene. Under the new scheme a department within the school will be known by the name of the Ross Institute of Tropical Hygiene, and on all official correspondence of the school the words will appear, "Incorporating the Ross Institute." Two members of the institute will be placed on the court of governors of the school and one on the board of management. For the work of Sir Aldo Castellani the school will provide laboratory accommodation, and he will take with him his laboratory staff at the institute, being appointed to the staff of the school with the title of director; and he will join the staff of the Tropical Hospital of the Seamen's Hospital Society, where the patients of the institute will be received. Sir Malcolm Watson will be appointed director of tropical hygiene at the school, filling the vacancy created by the death of Andrew Balfour. The pathological work now being carried on at the institute will be continued in the pathological department of the Hospital for Tropical Diseases. By the closing down of the hospital beds at Putney and by the ultimate sale of the property, economies will be effected, while the work will go on not only without interruption but with increased vigour derived from a wise fusion.

NERVE BLOCK FOR LABOUR PAINS

ALTHOUGH the greatest desideratum in connexion with the abolition of pain in labour is an anæsthetic which can be easily applied without expert aid, yet any increase of knowledge with regard to the physiology of the pains of confinement is not to be undervalued, even if it appears to contribute little to practical obstetrics. The experimental and clinical investigations carried out by J. G. P. Cleland [1] appear to have established important facts with regard to the routes for the painful impressions due to uterine contraction and to vaginal dilatation. The former seem to emanate from the eleventh and twelfth thoracic roots, the latter can be abolished by caudal block. Acting on the knowledge he had derived from experiment, Cleland used paravertebral block of the eleventh and twelfth thoracic roots in combination with caudal block, and procured painless labour. The block may last as long as eight hours and can safely be repeated. The paravertebral block abolishes the pain of uterine contraction without affecting the tone of the uterus, or the degree, frequency, or duration of contractions for a length of time varying with the type of anæsthetic used. The pain of dilatation of the birth canal was abolished by caudal block with about 20 c.cm. of 1 per cent. novocain or of percaine 1 to 500. The work described seems to have been completely successful in defining the exact nerve centres involved in the pain of uterine contraction, and shows how the hyperæsthesia of the abdominal wall depends on the spreading of sensation under the influence of severe stimulus in the manner first described by Head.

TUBERCLE BACILLI IN STOMACH LAVAGE

THE value of the stomach lavage method of demonstrating tubercle bacilli in children who do not readily bring up sputum is now well recognised. An analysis of the methods used was published some months ago in our columns by Dr. W. R. F. Collis and Dr. C. Fraser Brockington.[2] A comparative test has recently been made by C. Kereszturi, D. Hauptmann, B. Schick, and L. Mishulow [3] to correlate the results of the stomach lavage with the other more frequently used laboratory procedures of sputum, stool, and throat swab examination. The patients were children aged from 8 months to 15 years in the Sea View Hospital, New York, and represented different forms of tuberculosis; some of them showed no abnormality but a positive tuberculin test, others had far advanced bilateral pulmonary lesions. It was not possible to apply all four methods of diagnosis to every case recorded in the series of 101, so that the results of the methods are not strictly comparable throughout. The authors found that in the examination of 60 patients on the same two days, films of the stools yielded 20 per cent. and films from stomach washings 27 per cent. positives. When films examination of stomach washings was supplemented by guinea-pig inoculation of the same material the percentage of positives was raised to 33 per cent. In 10 cases a strictly comparative study of throat swab, sputum, stomach lavage, and stool examination were all carried out. The percentage of positives obtained was 30, 50, 60, and 60 respectively. Guinea-pig inoculations were also made as well as direct

[1] Surg., Gyn., and Obst., July, 1933, p. 51.
[2] THE LANCET, 1933, i., 127.
[3] Jour. Amer. Med. Assoc., 1933, c., 1481.

smears from the stomach washings, but bacilli were so readily found by direct smears that the biological test was unnecessary. The authors note that their positive findings for stomach lavage are definitely lower than those of other workers. Moreover they did not obtain much help from the more elaborate Armand Delille technique. They did not, indeed, find the stomach lavage method appreciably superior to the simpler methods, for although it yielded rather more positives the benefit was offset by the fact that lavage test is more troublesome to carry out and cannot be repeated frequently without inconvenience to the patient. It is perhaps not surprising that throat swab examination proved so unsatisfactory, but sputum examination might have been expected to yield better results than it did. It is, however, difficult to get samples of sputum in children and the sample obtained is not always a satisfactory one. The authors attempted also to correlate positive stomach lavage tests with clinical types of tuberculosis. They found that cases of destructive pulmonary tuberculosis showed 75 per cent. positive results as against 28 per cent. amongst clinically non-destructive lesions. Other forms of tuberculosis showed no positive results with the exception of one case of bone tuberculosis. It is concluded that a positive stomach lavage result augurs a grave prognosis.

MOUNT VERNON HOSPITAL

THE annual statistical report of the Mount Vernon Hospital, Northwood, submitted by the director, Sir Cuthbert Wallace, shows that in 1932 there were 383 cases treated and discharged for the first time. Nearly three-quarters of these cases were women, carcinoma of the breast and of the cervix being the preponderating groups. Of 21 patients with cancer of the lip and tongue treated one was a woman. Follow-up tables are being carefully developed, as sufficient numbers present themselves to enable division to be made by site, nature of the disease, and treatment adopted. At present the tables are confined to all cases (1930, 1931, 1932) of the tongue and rectum, and to all cases of carcinoma of the cervix, and of the breast which were untreated when first admitted. Cases of carcinoma of the breast tables are also subdivided according to treatment by interstitial radiation and by interstitial and surface radiation. Of the 36 cases in the former category observed for more than a year since treatment, 56 per cent. are reported dead, as compared with 30 per cent. of the 30 cases in the latter, but in the absence of an indication of the clinical grade that each tumour had reached when treatment was started the meaning of these figures is difficult to assess. The mortality recorded in all the tables other than that of carcinoma of the cervix where the "international degree" of the growth is stated must be read with the knowledge that many patients sent for treatment to a hospital known to give radiation treatment may have reached an advanced stage of their illness. All the numbers are, of course, still small, and the period of observation since conclusion of treatment relatively short, but the absence of "not traced" patients in all the groups gives promise of future valuable material.

In a note on the treatment of malignant growths of the upper jaw included in the report, Mr. Douglas Harmer and Mr. Stanford Cade emphasise the fact that experience has accumulated in the last ten years to show that these growths are so variable in type that no surgeon can undertake to treat them properly unless he has at his disposal all three main methods of treatment: surgery, diathermy, and irradiation. They maintain that growths in the jaw cannot be treated safely without radiation, that it is unnecessary to mutilate the patient by external incision through the skin of the face, and that nothing is gained by removal of the jaw. As most of the growths are complicated by sepsis, the first essential is to provide adequate drainage, and this can be obtained by removal of the hard palate and alveolus on the affected side or, in very localised tumours, by making a free opening through the incisor fossa. Such openings give free access to the growth, and the visible part of the tumour can easily be removed by diathermy without great risk of dissemination. Later the outlying malignant cells which are always present in the bony structure surrounding the cavity can be treated by irradiation. This method causes no deformity, and after the growth has been destroyed the opening in the palate can be closed by a well-fitting plate which is easily worn and allows the patient to speak and feed normally. A further point they stress is that the permanent opening in the palate allows the cavity to be inspected easily and early recurrences of disease detected and destroyed by diathermy or further irradiation. This method they have employed for over ten years with safety and very little distress to the patient. Complications are rare though occasionally the eye may be destroyed. As a rule no treatment of the glands of the neck is required. The general results have been, they report, undoubtedly better than those formerly obtained by surgery or diathermy alone. "When dealing with the highly malignant sarcomas and carcinomas one can confidently expect at least 50 per cent. of good primary cures and about 30 per cent. of long-standing results." With carcinomas of the ordinary squamous-celled types, they say: "life may be prolonged for several years even with extensive growths. Slowly growing tumours, such as endotheliomas, fibrosarcomas, &c., have a better prognosis and quite 50 per cent. can be cured for very long periods. Even recurrences can often be treated successfully."

The report also contains accounts by Dr. B. D. Pullinger and Dr. J. C. Mottram of work carried out respectively in the routine and research pathological departments; and a description by Mr. G. Cranston Fairchild of the X radiation technique and dosage employed for the various types of disease.

ŒSOPHAGEAL PEPTIC ULCER

ALTHOUGH peptic ulceration of the œsophagus was described by Albers in 1839, its general recognition as a clinical entity had to wait for the modern methods of diagnosis. It is, of course, much rarer than similar ulceration of the stomach and duodenum—Grüber's post-mortem statistics show 1 œsophageal to 30 gastric ulcers—and since, like these, it may cause no symptoms, there are probably many cases which remain undiagnosed. The symptoms may, on the other hand, be very similar to those of gastric ulcer (pain after food, hæmatemesis), and in the absence of dysphagia—due in the active stages to spasm and in the healing stages to organic stenosis—the lesion may readily be regarded as gastric. As with other forms of peptic ulceration it is supposed that contact with highly acid gastric juice plays a part in its causation, and it is a suggestive fact that pyloric ulceration and stenosis may precede the appearance of œsophageal symptoms. Such a sequence of events is described by J. W. Kamerling.[1] In this case partial gastrectomy had previously been done for

[1] Nederlandsch Tijdsch. v. Geneesk., 1933, lxxvii., 3023.

pyloric ulcer, and the author suggests that the resulting alteration in the acid conditions in the stomach allowed the ulcer of the œsophagus partially to heal, with the consequent development of œsophageal obstruction, for which the patient ultimately sought treatment. The diagnosis was made by radiography, the ulcer showing as a well-defined niche immediately below the constriction, and confirmed by œsophagoscopy. The treatment adopted was cautious dilatation of the stricture and application of 10 per cent. silver nitrate solution to the ulcer, under direct vision through the œsophagoscope. Repetition of these measures was followed by a successful result, and Kamerling suggests that topical applications of this kind may prove to be the best method of dealing with this somewhat rare condition. The same form of treatment, combined with use of alkalis, is recommended by W. G. Howarth[2] in this country.

DIFFERENTIATION OF SYSTOLIC MURMURS

THE systolic murmur is to-day largely neglected by cardiologists since it has been found to have little value either in diagnosis or prognosis. The reason for this is that such murmurs are perhaps more often found in the normal than in the diseased heart, and no sure method, based on the characters of the murmur itself, has hitherto been found by which the murmur of one can be differentiated from that of the other. The differentiation can only be made on other evidence of heart disease, and when that is forthcoming the murmur is no longer of significance. An attempt has now been made to distinguish pathological murmurs by analysing the sound waves obtained in graphic records of murmurs made with an electrical stethoscope.[3] Tracings were taken of systolic murmurs in 64 children, and it was found that in a large majority of the organic cases the recorded sound waves were of both high and low frequency, whilst in the functional a large proportion were of high frequency only. That in two cases where a clinical diagnosis was not possible the tracings were themselves of no value appears to show a serious defect in the method. The work is a contribution to the academic side of the subject, but in its present stage it can have little practical importance.

ACETABULECTOMY

A REACTION from the tendency to persevere over long periods in the attempt to cure tuberculosis of the hip without surgical intervention is noticeable. It was voiced by several contributors to the discussion at the International congress held last month.[4] Mr. A. Blundell Bankart has the support of most of his colleagues for his assertion [5] that in spite of the time, money, and energy expended on conservative treatment the results, at least in adults, are disappointing. It is a common experience for orthopædic surgeons to see recrudescence of hip disease in cases that have been quiescent for a period. The natural cure for a tuberculous joint is for the bony surfaces to come together and ankylose. This happens characteristically in spinal caries where it is impossible to prevent collapse of the vertebræ. Gordon Pugh's observation that tuberculosis of the hip often starts in the ilium immediately above the acetabulum, and only secondarily infects the joint itself, is of paramount importance in planning operative measures. The signs and symptoms due to the joint involvement overshadow those due to the primary lesion, with the result that treatment in the past has been concentrated chiefly on the secondary condition. That is why such operations as the old-fashioned excision of the hip, which really only amount to excision of the head of the femur leaving untouched the tuberculous osteitis of the ilium, are unsatisfactory. Similarly the operation of extra-articular arthrodesis of the hip-joint, now becoming popular, is, Mr. Bankart thinks, ill-conceived, because, if it succeeds in its object, it will prevent the bone surfaces from coming together and will permit the tuberculous abscess in the ilium to remain undisturbed and to become a constant source of danger in the future. He therefore recommends the operation of acetabulectomy which is essentially a real excision of the hip-joint, in which the acetabular portion is dealt with as radically as the femoral. The cases quoted and illustrated will encourage orthopædic surgeons to resort to this operation when the decision to abandon conservative measures has been taken.

[2] THE LANCET, 1932, i., 1188.
[3] Bass, M. H., Mond, H., Messeloff, C. R., and Oppenheimer, Enid T.: Jour. Amer. Med. Assoc., July 1st, p. 17.
[4] See THE LANCET, July 29th, p. 242.
[5] Brit. Jour. of Surg., April, 1933, xx., 551.

A CENTURY OF FACTORY INSPECTION

A HUNDRED years ago the first Government inspector of factories was appointed, following the passing of the Factory Act of 1833. It is fitting therefore that this year's annual report of the chief inspector, the first to be issued by Mr. D. R. Wilson since he succeeded Sir Gerald Bellhouse, should contain historical reviews of the development of the functions and responsibilities imposed on the department by progressive legislation. Nine separate records are included: on employment, by Miss F. Isabel Taylor, who also contributes a section on welfare; on safety, by Mr. W. B. Lauder, with a note on safety in the generation and use of electricity by Mr. H. W. Swann; on health, by Dr. J. C. Bridge; on truck, by Miss Hilda Martindale; on piecework particulars, by Mr. E. J. Holmes; and on homework, by Miss Alice M. Ahrons; on the Government wool disinfecting station, by Mr. G. Elmhirst Duckering; and on the Home Office industrial museum, by Mr. L. Ward.

In a general introduction to these surveys Mr. Wilson comments on the formidable task before the four original inspectors in the enforcement of an unknown and unpopular Act. These inspectors—Horner, Howell, Rickards, and Saunders—must have been exceptional men, happily chosen for their delicate duties; they evidently relied for the successful discharge of their functions on education and persuasion rather than on the full exercise of the autocratic powers conferred on them. The early developments of the service, the centralisation of the growing inspectorate under one head, the appointment, in 1893, of the first two women inspectors, and the introduction of the principle of specialist inspection (Sir Thomas Legge, the first medical inspector, was appointed in 1898) are noted as landmarks. The effect of the early Factory Acts was more far-reaching than could have been anticipated. They initiated the system of compulsory education in England, and even authorised the inspectors to see that the teachers were competent. The Act of 1844 gave them power to annul a schoolmaster's certificate on no more serious grounds than his incapacity to read or write! The raising of the age at which children may be employed, and the limitation of the daily hours of work of women as well as of children started a movement of which the full development has not even yet been reached. The

reason given in 1844 for making special provision for women has not lost its force in the intervening years—"they are more easily induced to undergo severe bodily fatigue than men."

As to health problems, the old prevalent scourges of lead poisoning and phosphorus necrosis have been largely overcome, only to be replaced by other diseases, such as occupational epithelioma, silicosis, and asbestosis, the existence of which was only dimly appreciated until recent times. It is satisfactory that the department concerned is not only alive to newly discovered industrial risks but alert to apply the results of recent research to their diminution.

RENAL ŒDEMA

THE sequence which leads up to œdema of the renal type has never been understood. Of late years increasing support has been found for Epstein's adaptation of Starling's theory, which attributes water-logging of the tissues to a low protein concentration in the plasma with consequent lowering of the osmotic pressure of the blood to the level of capillary pressure. It has been so often demonstrated that œdema of what may for convenience be called the nephrotic type is intimately associated with an abnormally low concentration of the plasma proteins, especially the albumin fraction, that this relationship must be accepted. It is by no means clear, however, that the diminished concentration of albumin is actually the precipitating factor in œdema of this type. Observations of a contrary significance are recorded, such as loss of œdema without change in the blood protein concentration; moreover the part played by changes in the plasma volume is disputed.

In view of this lack of agreement about the water content of the blood in œdema and the part played by the plasma proteins, McClure, de Takáts, and Hinman [1] have made a detailed investigation of the blood of seven children with œdema of the nephrotic type. They have studied their cases in all phases of acute attacks with the object of discovering the time relationships between alterations in the plasma proteins, the water content of the blood, and the different stages of the œdema. If the œdema is caused by inability of the kidneys to excrete water, then the water of the blood should increase with advancing œdema and fall in diuresis. Alternatively, if it is caused by loss of protein from the blood, diuresis should be preceded by a rise in the protein concentration—notably in the albumin fraction. The careful and considered observations of these workers show decisively that the relative volume of the plasma is below normal during the advancing stages of œdema. Towards the onset of diuresis the relative volume increases, and the increase is maintained during diuresis and may even exceed the normal level. This is explained as the result of a reflux of fluid from the tissues to the blood in diuresis. The plasma proteins, and in particular the albumin, are below the critical level of Moore and Van Slyke (5·5 per cent. total protein and 2·5 per cent. albumin) during advancing œdema. They remain below this critical level during and just after the phase of diuresis. After diuresis there is a gradual return of the composition of the blood towards normal. Allowing for possible fallacies it is therefore concluded that there is no significant increase in the plasma proteins before diuresis. They interpret the process of œdema as a movement of water from the blood to the tissues controlled by some unspecified extravascular factor. The primary cause is not to be sought in the kidneys, which are able to excrete water as soon as it becomes available for excretion. The possible part played by the capillary walls is not discussed, nor do the authors of this paper attempt to explain the associated albuminuria. Nevertheless their contribution to our knowledge of the water balance in nephritic œdema is a substantial one.

[1] McClure, W. B., de Takáts, C. B., and Hinman, Winifred F.: Arch. Internal Med., 1933, li., 819.

RESEARCH ON FOOD

THE report of the Food Investigation Board for 1932 [1] sets out the diverting researches which workers under the Board are conducting, and raises a number of problems to which future reports will no doubt give answers. The better storage of meat has received considerable attention, and carbon dioxide, in a concentration of about 10 per cent., has been found to double the storage life of chilled beef. Carbon dioxide is also useful for storing bacon, which can be kept in it at 5° C. for nine weeks. The absence of oxygen prevents rancidity, and the carbon dioxide seems to have a specific effect in preventing "taint." Pork has been kept fresh in it for 17 weeks, and the joints were exceptionally tender when eaten. If this discovery can be used in ships' holds, Australia and New Zealand will be able to send chilled instead of frozen meat to this country. Meat storage chambers as at present constructed on ships allow considerable leakage, and a new design will have to be introduced if this market is to be opened up. An experiment with bacon has shown that dry salt curing gives a much less salt and more tender product than tank-curing; the latter method is used in Denmark. Light has been thrown on the preservation of meat by freezing; deterioration is most rapid at −2° to −3° C., and almost nil at −20° to −25° C. The interplay of two factors determines the rate of deterioration at any temperature: removal of water by ice formation, which changes the pH, and fall of temperature, which slows down chemical change. A third important factor is the amount of bacterial infection produced during handling. Large carcasses can be stored better than small joints because the fat and connective tissue covering does not favour bacterial growth, whereas exposed lean is an excellent culture medium. Meat with a bacterial count of 43 per sq. cm. can be kept for 18 days at 32° F., and 100 per cent. relative humidity, but if the count is 17,000 the period is reduced to ten days. The preservation of fish is also being studied and plants for brine-freezing on trawlers have been designed. The tunnel-shaped kiln designed for research work on smoke-curing of kippers and haddocks has been adopted in commerce. The use of burning sawdust as a source both of heat and smoke has many disadvantages; in the new design the two processes are largely separated, electricity being the source of heat and sawdust smoke being blown in from outside, by electric fans, at the right temperature and humidity.

Much work has also been done on fruit storage, and experiments have been made to ascertain the optimum conditions for keeping various kinds of apples. So small a change of temperature as 1° C. may have a marked effect on wastage. In the course of the work, apples have been found, during ripening, to give a "vapour" which is poisonous to seedlings. Photographs in the report show its stunting effect on peas; the poison is apparently ethylene or something similar. It is only given off at and after the apple's "climacteric" (the respiratory change which

[1] Dept. of Scientific and Industrial Research. H.M. Stat. Office. 1933. Pp. 304. 5s.

all apples undergo as age advances). If the vapour from such apples is passed over other fruits the climacteric is at once induced in them. The same phenomena are seen in tomatoes and bananas. The volatile products from the banana seem to counteract the effect of a reduction of oxygen. This work should lead the way to a fuller understanding of fruit disease. Another very important study undertaken is an attempt to determine the extent and causes of fluctuation in the vitamin-A potency of halibut liver oil. Other workers [2] have recently called attention to the discrepancies that may be found, reporting a fivefold variation in potency over 17 months in a particular brand of cod-liver oil. They could not ascertain the cause, but were able to exclude seasonal influences and the basal diet, weight, and rate of growth of the experimental rats. The Food Research Board, working on the halibut, has excluded the position of the fishing ground, the food and liver-glycogen of the fish, and seasonal changes. The only clue at present is the discovery that just before exceptionally rich oils were found there was a large seasonal increase in diatoms in the Irish Sea. Since the fluctuations vary from 30 to 7600 units it is obviously of urgent importance that they should be understood and controlled. The active therapeutic principle for pernicious anæmia has been found in fish liver, and a palatable extract has been obtained and refined. Tentative commercial production has been arranged and clinical tests are being carried out.

THE ALVEOLAR HYDATID

THE relationship of the rare alveolar hydatid of man to the relatively common multilocular hydatid of animals and the ordinary hydatid of sheep and man has been vigorously debated for nearly 60 years. Probably at last it has been settled. The differences between the two loculated forms have been summed up thus by F. Dévé.[3] The bovine form has large intercommunicating loculi filled with gelatinous matter and always sterile, does not infiltrate lymphatics or produce metastases, and with the rarest exceptions has no disposition to central necrosis. The human form looks worm-eaten, is not always sterile; owing to the absence of a cuticular covering is apt to infiltrate lymphatics and produce metastases, and tends to central necrosis. Nearly two years ago H. Dew [4] reported the first case of alveolar hydatid from Australia. But it had this other great interest: it showed characteristics of both the alveolar and multilocular forms, and possessed also in places ordinary small sterile hydatid cysts. Finally, by the courtesy of M. Maresh, Dévé has obtained from the Pathological Museum of Vienna portions of a tumour which Posselt, in 1906, described as an ordinary hydatid and an alveolar hydatid lying in the heart of man, side by side, separate and distinct, with no connexion and no intermediate stages of structure. Dévé [5] had felt that if the two forms were really zoologically distinct the finding of both in such an unusual site constituted an extraordinary coincidence, and on examination of the Vienna material he did in fact find all intermediate conditions between the two supposedly distinct forms; so that this curious loculative change in the hydatid must be ascribed to some special effect of the environment. As Dew too had pointed out, this conclusion agrees with the well-known fact that hydatid of bone shows peculiarities suggestive of alveolar hydatid so long as it lies within bone, but that as soon as it reaches the periosteum it assumes the ordinary hydatid character. The reasonable conclusion from these facts is that there is one species of hydatid which occasionally grows in abnormal fashion as the result of abnormal, presumably extrinsic, stimuli; and that the health officer is not faced with the attempt to devise special preventive measures in the effort to combat infection from unknown strobiles inhabiting an unidentified host species.

[2] Coward, Katharine H., Key, Kathleen M., and Morgan, Barbara G. E.: Biochem. Jour., 1933, xxvii., 873.
[3] Prensa Méd. Argentina, 1932, xix., 664.
[4] Australian and New Zealand Jour. Surg., 1931, i., 115.
[5] Compt. rend. Soc. de biol., 1933, cxiii., 223.

AN ANÆMIA DEFINED

Wintrobe and Beebe [1] have done a useful service in reviewing what is known of idiopathic hypochromic (or microcytic) anæmia. As many as fifteen names have been given to this disorder, and their reason for preferring "idiopathic hypochromic" is that they believe that the two characteristics seen in all variants of the clinical picture are hypochromia and an absence of all the accepted causes for it; achlorhydria is not always present and is therefore omitted from the title. From an analysis of 473 cases recorded by other workers and 25 of their own, they describe the condition as an anæmia of unknown ætiology occurring especially but not exclusively in women in the third to the fifth decade of life. It is characterised by an insidious onset, long duration, and symptoms such as are common to all anæmias, and in addition, glossitis, stomatitis, dysphagia, paræsthesia without objective neurological finding, and often splenomegaly and koilonychia. There is often achlorhydria. The features of the anæmia are microcytosis and hypochromia, ready response to adequate iron therapy, and often a tendency to relapse when treatment is discontinued. The mean corpuscular volume in Wintrobe and Beebe's own cases before treatment averaged 65 c.μ. Figures as low as 50 c.μ were observed. They do not agree with many observers in this country that improvement during the first month of treatment may be slight. The available evidence suggests, they believe, that the fundamental disturbance is defective gastric secretion, though experiments in which beef steak digested with healthy gastric juice was fed proved negative. The preponderance of the disease in women, they agree with Witts, is probably due to the demands of menstruation aud repeated pregnancy. Such factors as deficient diet, menorrhagia, blood loss from hæmorrhoids, and dysphagia are secondary and not primary factors in the ætiology.

[1] Wintrobe, M. M., and Beebe, R. T.: Medicine (Baltimore), 1933, xii., 187.

WE regret to record the death, on August 1st, of Mr H. M. Wharry, surgeon for diseases of the ear, nose, and throat to the Bolingbroke Hospital.

INDEX TO "THE LANCET," VOL. I., 1933

THE Index and Title-page to Vol. I., 1933, which was completed with the issue of June 24th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

LONDON HOSPITAL.—The special post-graduate course for former students of this hospital will be held from Wednesday, Oct. 11th, to Saturday the 14th. The annual dinner will take place on Thursday, Oct. 12th, at the Trocadero Restaurant Piccadilly-circus, W.

SPECIAL ARTICLES

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING IN DUBLIN

IT was not an easy task for the local executive of the Dublin meeting so to arrange the 101st meeting that it would not suffer by contrast with the centenary meeting held last year in London. It did not so suffer mainly because no attempt was made to copy the London meeting, the Dublin executive wisely deciding to keep within their necessary limitations and to make most use of the advantages of their city. It was the universal opinion that the organisation was excellent, and indeed hardly anything for the comfort and convenience of the members was overlooked. The Leinster branch of the Association attracted many willing helpers from among lay friends, and all the public authorities from the Government down showed generous hospitality and a recognition of the importance of the occasion.

Dublin is not a large city and distances are not great, and therefore, although it was necessary to divide the sectional meetings between Trinity College and University College, little inconvenience was caused. The premises of the Royal Dublin Society which were generously lent to the Association for the sessions of the Representative Meeting and for the public lecture were probably the most convenient the Association has had at its disposal in recent years. The registration office and the trade exhibition were conveniently situated in the Mansion House, close to the principal hotels and near the centre of the city. There is beautiful country immediately surrounding Dublin, and a few minutes brought members and their ladies to the seaside, to the hills, or to one of the several golf-links which offered free hospitality to the members. Fortunately also for the greater part of the time the weather was fine, and if it was rather warm for dancing at the evening receptions, the fact did not appear to deter the energetic from that pastime. Only on the final two days was there any rain. The most notable of all the social functions was the State reception at Dublin Castle given by the Government, at which the guests were personally received by Mr. De Valera. This was only the second occasion since 1922 that the Castle has been used for a social function.

The gratitude of all who were present is due to the local honorary secretaries, Dr. J. P. Shanley and Prof. J. W. Bigger, for their indefatigable labour. But the influence which dominated and permeated the whole meeting was that of the President, Regius Prof. T. G. Moorhead. Knowing every detail of organisation, attending every function, conversing with everyone, he appeared equally at home in delivering a historical address or an after-dinner speech. His courtesy, his tact, his simple dignity impressed everyone, and those who met him for the first time during the meeting now share the respect and affection in which he has long been held by his colleagues in Dublin.

PROCEEDINGS OF THE REPRESENTATIVE BODY

(*Concluded from p. 261*)

Hospital Policy

FACILITIES FOR GENERAL PRACTITIONERS

Last year it was resolved that the Association should press, at the earliest opportunity, for facilities for general practitioners to treat their patients in general hospitals, and in order to emphasise this principle Dr. PETER MACDONALD, chairman of the hospitals committee, moved, on behalf of the Council, an addition to the hospital policy in the form of a paragraph requiring that accommodation should be provided in all districts for the treatment of patients by general practitioners. If effect was to be given to this principle, he said, the local divisions and branches must take action when any hospital extension scheme was under consideration. An increase of beds would be necessary before the principle could really be put into action, and therefore it was ultimately a question of finance. The hospitals were beginning to take a keen interest in the provision of private wards and beds, and the public were beginning to recognise that they could expect to get the best treatment and nursing under the conditions found in an institution. The Council had therefore authorised the hospitals committee to get into touch with bodies organising provident schemes for middle-class patients. This step had been taken but progress was bound to be slow. The addition to the hospital policy was supported by the meeting.

ADMISSION OF PRIVATE PATIENTS: THE BRIGHTON AMENDMENT

In the hospital policy of the Association the following provision found a place:

> When the special accommodation for private patients takes the form of a separate home or hospital provided exclusively for such patients, such home or hospital being an annexe of, or associated with, a voluntary hospital having public wards:
> (*a*) the patient should be allowed to select any available registered practitioner as his attendant.

Dr. Macdonald said that the distinction drawn in this paragraph was one of bricks and mortar. During the year a certain hospital had built an annexe containing private wards, and the Association had approached the governing body with a view to obtaining access for general practitioners to the new building. The governing body had replied quite courteously that they intended the new buildings for the use of their staff, and that it was in their hands to decide to what purpose the annexe should be put. "Your distinction," the Association was told, "is based on a question of building. But it is for the governors of a hospital to decide who shall use their beds, regardless of where they are housed." This was true, and the Council, recognising that the position could not be maintained, had found it necessary to alter the policy on the lines of a motion which Dr. Macdonald then stated. This provided that when accommodation was available for private patients (whether in rooms, wards, or special buildings) in a hospital with a visiting staff normally responsible for the care of all patients in the public wards, then a private patient should be under the responsible care of a member of the visiting staff in association with the general practitioner. But that where arrangements had been made by the governing body to permit practitioners not on the staff to have responsible care of private patients, the patient should be entitled to choose any available practitioner. If the hospital had no visiting medical staff ordinarily responsible for the care of patients in the public wards, the patient should be admitted under the responsible care of a private practitioner. These main provisions, confusing enough in themselves, supplied

the gunpowder for a pyrotechnic display by Brighton, which left the meeting dazzled and bewildered.

First, however, Dr. ERNEST WARD proposed, on behalf of Torquay, that the motion should be referred back to Council. He admitted, with disarming frankness, that the Torquay division had attempted to redraft the motion in accordance with the various views of the members, but had given it up in despair, and had decided the Council had better have another shot at it. The Torquay division thought that only one man—the general practitioner—should have responsible care of the patient in a private ward of a hospital; the motion, he said, was ambiguous on this point. Also, if any number of practitioners could make use of a hospital the position became impossible from the administrative point of view.—Dr. C. E. S. FLEMMING said this was a bogy. The Forbes Fraser Hospital at Bath was available to all the medical men in the neighbourhood, and there had never been the slightest difficulty in administration.—Sir CRISP ENGLISH said that if general practitioners had free access to hospital they would not need to take post-graduate courses in order to keep abreast of scientific advances. If the Council's motion was carried the Association would have done much to consolidate the hospital policy. He pointed out the opportunities for preaching this principle which members of the B.M.A. had among the patients they saw daily.

Dr. E. H. M. MILLIGAN (Brixton) said that the policy outlined by the Council had already been adopted in a small cottage hospital in his area with success and with complete harmony between consultants and general practitioners.—Dr. C. MCK. CRAIG, Dr. MARION GILCHRIST, and Dr. B. G. S. BELAS all supported the Council's motion, and Torquay's attempt to get the matter referred back was quashed.

Then Dr. W. PRINGLE MORGAN rose to put the Brighton amendment. And the spirit of Dr. E. R. Fothergill was projected into the meeting from distant Sussex, to stalk abroad like a benign poltergeist and upset everything. Dr. Morgan made a valiant attempt to explain the motion. It was based, he said, on the principles: (1) that it was desirable that hospitals should be available for both general practitioner and specialist treatment; and (2) that the patient should have free choice of doctor. Dr. Fothergill had drafted the amendment, and had sent round his arguments, printed upon paper of an arresting pink, for the consideration of representatives. Dr. Morgan begged them to study these arguments. If the Council's motion was carried the doctor would, in most cases, lose his patient and the patient his doctor as soon as hospital treatment became necessary.

In spite of the pink paper no one seemed to be able to place a finger upon the kernel of the Brighton amendment, though many tried. Dr. MACDONALD said that the object of the amendment was the generally shared one of securing, in the best possible way, the access of general practitioners to hospitals. To gain an object one might use either suasion or a big stick, but if a stick was chosen it was wise to make sure that it was bigger than the other fellow's. If the Association tried to enforce its views on this matter it would be beaten: it had not so much as a small cane to use against the shillelah of the hospital governing bodies. The Brighton amendment was likely to antagonise such bodies. Dr. Fothergill, if he lived to be a hundred, would always be a young man in a hurry; his qualities were invaluable as a stimulus to activity, but not as a guide to conduct. The functions of the hospital policy were not propagandist; it was intended to act as a guide to divisions and branches and to enable the central body of the Association to give an answer when faced with specific questions.

Dr. R. BOYD (Manchester) supported Brighton on behalf of his division. The point of the amendment, he said, was to secure the admission of private patients to the private wards of a hospital on the same terms as they were admitted to nursing-homes.—To Dr. N. F. ADENEY (Bournemouth) the point at issue was the fact that in the Council's scheme the patient was under the care of the consultant in association with the general practitioner. The Brighton amendment made the general practitioner the responsible person, with the opportunity of calling in a consultant if he wished. It was unlikely that this arrangement would antagonise members of hospital staffs, since the pure specialist would prefer to be called in for consultation only.—Mr. W. MCADAM ECCLES thought that in certain areas the type of institution designated by Dr. Cox as the home hospital might be used by general practitioners for their patients.

Mr. N. BISHOP HARMAN said that no one had so far expressed the basis of the Brighton resolution. The universal postulate that the patient should have free choice of doctor was the nucleus upon which the amendment was built up. And anyone who built up a scheme upon a universal postulate was bound to get into difficulties. It was obvious that in some conditions it was impossible to have free choice of doctor: the villager, for example, had to go to the local doctor because there was no one else available. The amendment was based upon a fallacy, and he asked the meeting not to accept it.—Sir HENRY BRACKENBURY said that the amendment was really concerned with the theoretical difficulty which had been embodied in the hospital policy two years ago—namely, the problem of distinguishing between hospitals in which there could be free choice of doctor, and hospitals in which there could not. Brighton was trying to maintain the bricks-and-mortar distinction which experience had shown to be untenable.—Sir ROBERT BOLAM said that the Council's motion was so drafted that even a teaching hospital could admit practitioners to look after patients in private beds if the governing body agreed. He believed that it would meet the varying conditions up and down the country, and he asked the meeting to turn down the Brighton amendment; which they were content to do.

Dr. J. R. DOBBIN moved an amendment on behalf of West Suffolk, which restated the provisions of the Council's motion in rather simpler terms.—Dr. MACDONALD accepted this on behalf of the Council and the meeting endorsed his judgment. The final resolution read as follows:

(1) The normal method of admission of a private patient should be on the recommendation of a general medical practitioner, and if in an emergency a private patient is admitted without the cognizance of his private medical attendant, the latter should be informed immediately.

(2) When accommodation is provided for private patients in or in connexion with a hospital, either in the form of rooms, wards or special buildings, the following conditions should apply:—

(A) if the hospital has a restricted visiting medical staff which is ordinarily responsible for the care of all patients in the public wards, then either—

(*a*) The patient should be under the responsible care of a member of the visiting medical staff in association with the private practitioner of the patient. In this case the private practitioner should have free access to the patient and should have such share of responsibility

and treatment of the patient as may be agreed upon between the member of the visiting medical staff and the private practitioner; or

(*b*) If arrangements have been made by the governing body to permit the access of practitioners not on the staff to have responsible care of their own patients, the patient should be entitled to select any available practitioner, but if at any time the treatment of the case involves the application of special skill or experience, the practitioner giving such treatment may be required to satisfy one or more of the following conditions:—

(i) That he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered, and has had actual recent practice in performing the service rendered or services of a similar character, or

(ii) that he has had special academic or post-graduate study of a subject which comprises the service rendered, and has had actual recent practice as aforesaid, or

(iii) that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

(B) if the hospital has not a restricted visiting medical staff, which is ordinarily responsible for the care of all patients in the public wards, the patient should be admitted under the responsible care of a private practitioner, and should be allowed, if necessary, to call in any consultant of his choice.

(3) The appropriate medical fees payable by the private patient in conditions mentioned above may be determined either according to a scale agreed between the medical staff and the board of management, or by private agreement between the medical attendant and the patient.

A proposal was introduced by Dr. F. C. MARTLEY on behalf of Kensington, requiring that applicants for admission to private wards should be submitted to a means test, which should vary according to the particular service required, and only waived in case of emergency. The wording of the motion was thought to be insufficiently lucid, and it was not supported by the meeting.

MEDICAL STAFFING: RESTRICTED OR UNRESTRICTED

In order to make the choice of doctor as free as possible, and to increase the opportunities of private practitioners to treat their own patients in hospital, Dr. MACDONALD moved, as a recommendation of Council, that the practice of unrestricted staffing of general hospitals of less than 100 beds should be extended; and that in any scheme for the extension of hospital accommodation, beds should be made available for the treatment of patients by general practitioners. This was an amendment of the existing hospital policy, which only recommended that the unrestricted staffing of hospitals of less than 100 beds should be extended.—An amendment by Torquay suggesting that the motion should be referred back to Council was withdrawn when the purpose of the motion had been explained.

Dr. FLEMMING hoped that the Council would give some attention to the question of restriction of hospital staffs. It should not be difficult to convey to the public that hospital accommodation was needed for the use of the general practitioner. Young men left hospital equipped with knowledge of the latest scientific technique, but they had no chance of using it. Older men realised the need of hospital beds to facilitate proper diagnosis and treatment.—Dr. R. G. GORDON thought that it would allay opposition if it was stated in the hospital policy that hospitals of less than 100 beds should retain the right to restrict their staff if there were special reasons for doing so.—The Council's recommendation was supported by the meeting.

MODEL LETTERS FOR HOSPITAL PATIENTS

Dr. WARD, for Torquay, moved that the Association should press for the strict observance of its recommendation that all patients attending hospital for consultation or treatment should bring with them a letter from their private medical attendant, whether they were members of a contributory scheme or not.—An attempt by Dr. J. A. HOOKER, for Bristol, to introduce the words "other than those of the indigent class" following the word "patients" was heartily rejected.—Dr. MACDONALD said that he was willing to accept the original motion if Torquay would withdraw the word "strict." The Council, he said, could not do much more than they were already doing. They had issued a model hospital letter, 70,000 copies of which had already been sold. He appealed to the divisions to press for their use until the custom became established.—Torquay was willing to waive the word "strict," and the meeting accepted the motion.

Dr. WAND moved, for Birmingham Central, that all patients who presented themselves without a doctor's letter at hospital for treatment should be examined by a medical practitioner on the staff of the hospital; they would fall into two categories: (1) emergencies; (2) non-emergencies. Emergencies should receive appropriate first-aid treatment, and, if no special hospital treatment was required afterwards, should be referred back to their own doctor. Non-emergencies, unless they required special hospital treatment, should be referred back to their own doctor without advice or treatment. A model letter to be sent to the doctor had been drawn up by Birmingham and included in the motion. The encroachments committee, appointed by his division, Dr. Wand said, had approached the hospitals and tried to get them to use the model letter; some had agreed to do so, others apparently consenting had not honoured the arrangement. If a workman had a pain in his stomach the foreman sent him to the office to get a hospital voucher, and his own doctor might not see him until two or three weeks later, when he was really ill. Or a patient might come into his surgery and say: "I've been told at the hospital to come to you, doctor, for my panel certificate." One, when asked why he had not come straight to the doctor for treatment, replied: "I thought you just gave the certificates, doctor." The feeling was getting about that there was something official about treatment at hospital, even if it was given by a junior house surgeon, and the family doctor was becoming a certificate writer.—Dr. MACDONALD said that this was an important resolution. There was evidently abuse of the facilities offered by such agencies as the Hospital Saving Association, for which the honorary staff must accept a certain amount of direct, and the general practitioner a certain amount of indirect responsibility. As the Association had just published a model letter of its own, that of Birmingham was redundant. He advised that the motion should be referred back to the Council for consideration, and to this Dr. Wand and the meeting agreed. Two more motions by Birmingham, arising out of the first one, were ruled out of order.

CONSULTATIONS AT HOSPITALS

Dr. MACDONALD moved that private patients should not be seen at the out-patient department of a voluntary hospital unless no other arrangement was practicable. It was sometimes convenient, he said, not only for the consultant, but for the patient and the general practitioner if a consultation could be arranged at a local hospital instead of in the consulting-

room of the specialist, which might be a long way off. Adequate safeguards, to prevent abuse of the practice, were stated in the motion, and it was accepted by the meeting without discussion.

EXTENSION OF THE CONSULTANTS' LIST

A motion was introduced by Dr. J. HUDSON, for Newcastle-on-Tyne, proposing that each regional consultants' committee should include representatives from each county in the area. How, he asked, was a man in Manchester to know whether or not a man in Newcastle was recognised by his local colleagues as having special proficiency or experience in some form of medical service? The motion was lost, however, on the strength of an explanation by Mr. BISHOP HARMAN that the regional committees had no power of selection but had only to decide whether an applicant fulfilled the requirements for admission to the list laid down by the Association.

Dr. R. G. GORDON proposed, for Bath, that the Council should consider how to standardise the requirement mentioned by Dr. Hudson—namely, that a man should be recognised by other practitioners in his area as having special proficiency in respect of some service. In the past, any man who could get one or two friends to say he was a specialist could get on to the Association's list. In one case a man was put on the list who was unknown to all except one or two members of the division; on other occasions men had been put on the list because those who properly came under the category refused to serve. He suggested that the question might be decided by secret ballot in each case.—Dr. MACDONALD accepted the motion for the Council, and the meeting passed it.

Dr. H. R. FREDERICK moved, on behalf of Swansea, that no consultant's name should appear on the list under more than one specialty.—Dr. C. O. HAWTHORNE explained that this had been the original intention, but that in some parts of the country where practitioners were few it was difficult to maintain the principle.—Dr. MACDONALD said that it would be a hardship to the patient to insist on this principle. At his request the meeting referred the motion to Council.

PATIENTS UNDER LOCAL AUTHORITIES

Dr. MACDONALD proposed a scheme of payments to be made where a local voluntary hospital gave in-patient treatment to patients for whom the local authority accepted financial responsibility. These were as follows: The local authority should pay the hospital, as maintenance cost of each patient, a sum not less than the cost of maintenance in the local authority's hospital for similar service, plus an addition of one-fourth in respect of medical services; 20 per cent. of the total sum should be allocated to the visiting medical staff.

The motion was accepted without discussion.—Dr. N. F. ADENEY proposed, as a rider, that in the case of similar out-patient treatment a payment should be made representing the usual charge made by the voluntary hospital for such service, plus one-fourth for medical services. This was referred back to Council for consideration.

HOSPITALS AND DOMICILIARY ATTENDANCE

Dr. ADELAIDE RENSHAWE, for Kensington, referred to paras. 181–193 of the report of the committee appointed by King Edward's Fund to inquire into out-patient methods, and moved that it was contrary to the best interest of the patients concerned, as also of private medical practice, that arrangements should be made by hospital authorities for any form of domiciliary attendance otherwise than through the general medical practitioner. This paragraph, she said, suggested that hospitals should make use of district nursing associations in order to give treatment to patients who had ceased to attend.—Dr. MACDONALD deprecated any strong expression of opinion by the Representative Body on this point. The patients to which the paragraph was evidently intended to refer were those who needed such daily attention as a nurse could give; the doctor would not care to receive a letter asking him to arrange for a nurse to carry out the hospital consultant's treatment. He asked the meeting to refer the motion back.—Sir HENRY BRACKENBURY said he did not entirely agree with the arguments used by the chairman of the hospitals committee, and he thought that was another good reason for referring the motion back.—The meeting thought so too.

PROVIDENT SCHEMES

Dr. DAVID LEES (Edinburgh and Leith) moved that the Council should be instructed to expedite the work of the conference of those interested in provident schemes, so that all divisions might have at their disposal the considered opinion of Council in all matters pertaining to the formation of such provident schemes in their own areas. These schemes, he said, were cropping up all over the country, and most of them had a closed panel and no income limit for subscribers. Often the promoters of these schemes refused to discuss the position with local practitioners.—The meeting supported the motion.

Road Accidents

Dr. J. W. BONE moved, on behalf of Council, that the moment was inopportune for approaching the Government with the suggestion that it should assume responsibility for the provision of emergency medical attendance in all road accident cases. Lord Danesfort, he said, had put forward a Bill to provide compensation for persons involved in road accidents, and since then Lord Moynihan had undertaken to sponsor another Bill setting out the policy of the B.M.A. If this was passed most of the objects desired by the Association would be achieved. A fee would be paid by the owner of the car, who would be covered by a slight addition to his third-party risk policy.—Mr. ECCLES emphasised the increase of road accidents in recent years.—Dr. W. PATERSON and Dr. E. H. T. NASH supported the motion, which was passed by the meeting.

In case the Bill should fail, Dr. WAND, for Birmingham Central, proposed that a new way of dealing with the difficulty should be adopted. Under this scheme the practitioner should send his account direct to the insurance company, and if the company found, upon investigation, that they were liable for the damage caused at the accident, they should remit the fee to the doctor. A scale of fees should be agreed upon by the insurance companies and the B.M.A.—Upon Dr. BONE's guarantee that the Council would give this method full consideration if the Bill was rejected, Dr. WAND agreed to withdraw the motion.

Public Medical Services

Dr. H. M. STRATFORD moved, on behalf of Kensington, that in view of the recommendation in the report of the committee appointed by King Edward's Hospital Fund to inquire into out-patient methods that minor cases should be referred to agencies providing general practitioner service, the Association should extend its support to the further expansion of public medical services.—Dr. BONE said that the

motion was unnecessary, in that the Association was already pledged to do and was doing what Kensington asked, but he saw no harm in passing it. Neither did the meeting.

A further motion by Kensington, suggesting a conference of representatives of existing public medical services, was withdrawn on the assurance of Dr. BONE that the time was not ripe for such a gathering.

Dr. J. H. MELLOTTE, for Lambeth and Southwark, wanted the Council to establish a national public medical service, on the lines of the national ophthalmic treatment board. It was inevitable, he said, that there should be a different subscription in different parts of the country, but on questions of policy scattered public medical services would be better governed by a central body. At present, when a public medical service was started two or three local men had to do all the spadework and put up the initial funds. If a central body was established by the Association it could loan the initial cost of starting schemes from a central fund.—Dr. BONE opposed the motion. Why, he asked, should the Association organise a central scheme for this purpose? Dr. Mellotte might as well ask for a national scheme for general practitioners, or to regulate the fees charged by consultants. The subscriptions to public medical services were bound to vary very much in different parts of the country. On the other hand, the Council of the Association might be able to help by giving advice on advertising schemes for such purposes.—Dr. N. E. WATERFIELD said that it was difficult to raise the funds to start these services in some areas, and the Association might well consider giving an initial grant for the purpose.

Dr. H. D. WOODROOFE asked the meeting to reject the motion. Continuity was already assured by the model scheme for such services laid down by the Council. A central committee was going to add greatly to expense.—Dr. T. F. KEENAN, however, thought the question of expense was unimportant, since these schemes soon paid for themselves. The Association was the proper body to further their development.—Dr. A. MCCARTHY said that public medical services only flourished if local men were interested, and the best way to interest them was through their pockets. If they had to provide the initial funds their assiduity was amazing and ensured success.—Dr. R. BOYD said that this was a reintroduction of club practice which had been successfully combated 20 years ago. The motion was lost.

Infant Welfare and Antenatal Work

Dr. STRATFORD moved for Kensington that the B.M.A. should represent to local authorities that much infant welfare and antenatal work could be done by general practitioners, either as part of general practice or as part of the benefits of a public medical service. He pointed out that emergencies might arise at a moment when the antenatal clinic was closed, and if the mother had not been examined by her family doctor, no one was available who knew the details of her case.—Dr. D. H. PAIN said that the B.M.A. had been making representations along these lines for years. In Kent, the only result had been the steady increase of public health employees. The general practitioner was not getting a fair deal; his livelihood was being taken from him behind his back.—Dr. C. M. STEVENSON advised practitioners to tackle their own local authorities.—Dr. H. W. POOLER said that infant welfare work was, or should be, purely educational. Medical practitioners were all doing educational work under the arrangements of general practice, but it must be agreed that they did not reach everybody who needed such education. Did the motion imply that clinics ought to be abolished, or merely differently staffed? He certainly thought that the person who was to attend the patient should do the antenatal work, and that antenatal clinics were undesirable except in the form of consultative clinics to which general practitioners could send their patients for an opinion.

Sir HENRY BRACKENBURY said that the Kensington motion was already the policy of the Association except as regards public medical services. The Act forbade local authorities from giving domiciliary attendance for these services, and therefore the Association could not suggest that they should be given through public medical services. He moved that the meeting should pass to the next business.—Dr. A. GREENWOOD (Maidstone) said that he had been 36 years in public health work, and consequently had early begun to take the bread out of the mouth of the general practitioner. In Kent, however, antenatal and infant welfare work had been left in the general practitioner's hands as far as possible, and nearly all the clinics in the county were actually run by local doctors in general practice.—Dr. E. H. T. NASH said that transgressions in the direction of treating patients were more commonly found at clinics run by voluntary bodies than in those under the control of local authorities. Well-run clinics were responsible for putting more work into the hands of the general practitioner than they took out. He thought that the future of the public health service was wrapped up in part-time work by general practitioners.—The meeting then passed to the next business.

Report on Arthritis

In presenting a report drawn up by the arthritis committee, Dr. R. G. GORDON said that it had proved impossible to draft a scientific classification of rheumatism, and the committee had therefore tried to differentiate certain well-defined clinical conditions. Lamentably little work had been done on the ætiology and incidence of rheumatism. Under the section on treatment the committee had tried to give full weight to those measures which seemed to them to have proved most useful. They had ventured to draw up a scheme for social service when times were better. It was suggested in the report that the spa hospitals of Bath, Buxton, and Harrogate, and the Red Cross Clinic, London, should collaborate in the preparation of lantern slides, cinematograph films, and casts illustrating the diagnosis and treatment of arthritis and allied conditions. When this material was complete, divisions and branches of the B.M.A. would be able to arrange lecture-demonstrations on the subject.—The meeting accepted the report with hearty thanks to Dr. Gordon and the rest of the committee.

Experiments on Animals

Dr. L. A. PARRY moved, for Brighton, that a committee should be appointed by the Council to consider the whole question of experiments on animals. This matter had not been investigated for many years, he said, and the views of the public and the medical profession had changed. Many medical men doubted the necessity and even the value of experiments on animals, and recently 50 doctors had signed a publication called "Vivisection of Dogs: A Case for Exemption." Brighton asked for further consideration of this subject by a special committee.

Mr. H. S. SOUTTAR, seconded by Dr. MACDONALD, moved, as an amendment, that the meeting was

convinced of the value of experiments on animals in the progress of medicine and the relief of human suffering, and was fully satisfied with the safeguards under which alone such experiments could be conducted in Great Britain and Ireland. One had only to think of insulin and diphtheria antitoxin, Mr. Souttar said, to recognise the value of animal experiments. The amendment was carried by a large majority.

Police Surgeons

Dr. J. NEWMAN moved, for Sheffield, that the Council should consider drawing up a scale of salaries for whole-time police surgeons. Many public authorities, he said, were now considering the appointment of such officers, who were expected to look after all the constables in the area—often averaging 240 miles a week by car in the discharge of their duties—and in addition were required to do special tests, such as blood grouping and counting and examination of stains. —Dr. WATERFIELD thought nothing should be done which would help forward the system of appointing whole-time officers.—Dr. J. T. D'EWART said that there were only three officers of the kind in England at present. Sheffield was the first city to appoint one, at a salary of £1000 a year; Leeds had followed suit, offering the same salary; Manchester, where the chief constable was a Scot, had offered £800. What would happen when Liverpool made an appointment? In Manchester there were 1600 police, whom the police surgeon was expected to attend; and these constables had no choice of doctor. The medical officer, moreover, was supposed to be a sort of super-sleuth, giving official evidence about murders and assaults. What became of his sick constables while he was in the witness-box? As a rider to the motion, he suggested that a scheme should be drafted whereby members of the police force should have free choice of doctor. Motion and rider were accepted by the meeting.

National Health Insurance Problems

Dr. ERNEST WARD proposed, for Torquay, that the Association should press for the abolition of the compulsory compilation of statistical panel information on record cards, which should be used only for clinical notes. In most cases, he remarked, the panel information on record cards was inaccurate, therefore useless for statistical purposes and irksome to maintain. In Northern Ireland only clinical details were put on the cards, and no attempt was made to keep a record of attendances and visits. If statistics were needed on these points it should be possible to select special practitioners to make investigations on special points.—Dr. JONAS said that the Insurance Acts Committee had been trying to get this policy adopted for some time. He could not accept the statement that these statistics were for the most part inaccurate, but agreed that they were to some extent useless.—Dr. PAIN said that Sir James Mackenzie had disputed the contention that bad records were better than none at all, holding that they only made confusion worse confounded. He thought that it would be worth while spending a fraction of the money now spent on the maintenance of records upon devising a practical method of record keeping, and told the story of a doctor who had kept his records with such accuracy that he was mildly reprimanded by the commissioner for having records 200 per cent. longer than those of anybody else.—He was supported by Dr. WILLIAMS, but the motion was lost.

Torquay was asked to withdraw an amendment suggesting certain alterations in the rules for certification, on the grounds that the proper place for this motion to be discussed was at the panel conference.—Dr. WARD consented for Torquay, and the meeting gave permission for withdrawal.

A motion, by Glasgow, that lectures on National Health Insurance practice should be given to medical students, and that the Association should pay a fee to the lecturers was lost.—Sir HENRY BRACKENBURY considered that the Association should not have to pay for something which should form an integral part of medical training.

The meeting passed without discussion a motion, by Edinburgh and Leith, that a protest should be made against any interference with the liberty of the insured person to change his doctor when he so desired.

Complicated Certificates

Dr. OSCAR WILLIAMS moved, for South-West Wales, that insurance companies should be prevailed upon not to demand complicated forms of certificates for accident or sickness claims; or pay a fee of one guinea each for them. In many cases, he said, the forms at present required were almost as complicated as life insurance forms: they asked for the full medical history of the patient, his blood pressure, and other details. It was unfair to the client that so much information should be disclosed to the insurance company; in some cases companies had cut patients off from their list of insured persons at the end of the year, following the receipt of such a certificate. Often the doctor received nothing for filling in such forms, which he might consider quite unnecessary.—Sir HENRY BRACKENBURY said that efforts had already been made to remedy this abuse. The motion was carried.

Income Limit in Contributory Schemes

Dr. WARD, for Torquay, urged that the Association should take action to ensure the strict observance of the income limit in hospital contributory schemes throughout the country.—Dr. PETER MACDONALD reminded the meeting that the Association had no powers by which it could ensure such strict observance, though steps had been taken already to promote it. At his suggestion the meeting passed to the next business.

A Medical Diplomatic Service

A motion was introduced by Dr. H. M. STRATFORD, for Kensington, calling the attention of the Council to the possible advantage of organising a health department in the British Diplomatic Service. If it was important to have military attachés, he said, it was equally important to have health attachés who would keep the government informed of the health services and legislation abroad. The meeting thought there was something in this idea, and gave Kensington their support.

Shortage of Officers for the Defence Services

Dr. F. W. GOODBODY said that for the last four or five years there had been complaints of the conditions under which medical men worked in the fighting services. Three years ago the Council had drawn up a series of recommendations which they thought would remedy the difficulty of getting qualified men to enter the services: at that time the medical men in the Army nearly all held the rank of major, and it was difficult to secure the necessary entry of 25 a year. The R.A.F. and the Navy were also suffering. Since the war there had been no examination for medical men entering the services. In 1925 the Council approached the War Office and some

improvements were secured. Two years ago the Warren Fisher Committee had been appointed to inquire into these conditions; representatives of the Association had given evidence before the committee and had been sympathetically received. When the economic crash came the committee had stopped sitting, but recently the Association had pressed for a reply and the committee had begun to sit again and were to issue a report shortly. The recommendations would probably go some way to meet the requirements of the medical profession, especially in relation to younger men entering the service. Dr. Goodbody therefore proposed a motion in the following terms:

That the Council be instructed to consider the report of the Warren Fisher Committee when published, and the action of the Government arising thereout. If the action of the Government is considered to be unsatisfactory the Council shall have full authority to advise members of the profession seriously to consider the disadvantages to which they are liable if they accept service as officers in the Royal Naval Medical Service, the Royal Army Medical Corps, or the Royal Air Force Medical Service, including the medical services of the Royal Naval Reserve, the Territorial Army, and the Auxiliary Air Forces.

Mr. H. S. SOUTTAR, seconded by Dr. R. G. GORDON, moved, as an amendment, that all the words after "authority" should be deleted, and replaced by the words "to take such action as they consider necessary." He was in full agreement, he said, with Dr. Goodbody's motion, but it was not tactical to hold a pistol to the head of one's opponents in the midst of negotiations. It was probable that the Warren Fisher report would remedy the position to a great extent.

Mr. BISHOP HARMAN said that the pistol, as Mr. Souttar called it, was well known already, and it was folly to try to hide it.—Surg.-Admiral A. R. THOMAS begged the meeting not to pass the amendment. The medical officers in the services were looking for help: if action became necessary the Council ought to be able to take the required steps at once, without having to wait another year for the sanction of the Representative Body.—He was supported by Wing-Commander STANLEY TURNER.

Mr. SOUTTAR asked leave to withdraw his amendment, and the motion was passed unanimously.

The deliberations of the Representative Body being completed the annual general meeting was held at which Lord DAWSON OF PENN, the retiring president, relinquished the chair to Prof. T. G. MOORHEAD, who in his turn introduced Mr. F. W. RAMSAY, president-elect for 1934–35. The meeting was then adjourned to the afternoon, when the President gave, before a brilliant gathering, the address on the Work of the B.M.A. in Ireland, which was printed at the front of THE LANCET last week.

THE ANNUAL DINNER

On July 27th members and their ladies dined together at the Gresham Hotel, in O'Connell-street, under the presidency of Prof. T. G. MOORHEAD, and had the privilege of hearing Mr. Denis Cox, who sang exquisitely a number of ancient songs in Erse. Mr. W. Lemass sang Irish songs of a more modern date. Prof. Arthur Burgess proposed "The City of Dublin"—the perfect host, as he said. Alderman ALFRED BYRNE, for the fourth time Lord Mayor of Dublin, replied to the toast. There was, he said, a great body of men and women in the city who would feel helped ann encouraged by this visit of the Association. He had been deeply impressed by the paper on slum-dwellers read at one of the sectional meetings. In Dublin people were clamouring for houses—they lived as many as 12 in one room. The municipality had built 300 cottages to be let at a reasonable rent, and they had 11,000 applications for them. The housing problem had to be faced in every country, and those who helped in this work would get good value for their money. All Ireland, he said, appreciated the work of the lady sitting beside him (Lady Aberdeen) who had helped so much in the fight against tuberculosis in Ireland. It would be better for all parties, he thought, if we all had a little less condemnation for those who differed from us.

Mr. HUGH KENNEDY, Chief Justice of Saorstat Eireann and a survivor of the festivities of the 1887 meeting, proposed "The British Medical Association." There were, he said, survivors of the 1867 meeting, but they were medical men and it was their business to survive. The year 1867 had been a year of revolutionary activities, and had been marked also by progress in medical work. Now, in 1933, the Irish were rebuilding their national life after an effective revolution. They were not confining themselves to military exercises, but were setting out to reform the poor-law and public health service. Two years ago, in opposition to the law existing at that time, measures had been begun in the field of public health, with the result that they were now developing well-equipped hospitals, and offering a stipend for those engaged to use them. On the question of clean milk, they hoped to follow the advice given by one of their councillors, and take the bull by the horns. Sir HENRY BRACKENBURY in replying said that the kindness of the Irish welcome was robbing the guests of adjectives to express it. The British Medical Association was a voluntary professional society, having for its objects the honour and interest of the profession and the advancement of medical science. Laws and social customs might differ in the countries embraced by the Association, but everywhere the best interests of profession and public were identical. He had seen such friendly zeal in a common cause among members of the Association, that he believed their annual meetings contributed to the friendliness of fellow workers, the sympathy of peoples and the better understanding of administrators and governments.

Mr. F. C. CRAWLEY, president of the Royal College of Surgeons in Ireland, proposed "The Guests." At the meetings of the Association, he said, they had offered full knowledge of the subjects discussed, with open hands, and had shown that there were other ways of looking at things than the Irish. Mr. T. L. LINDSAY SANDES, president of the South African Federal Council, who had not visited his native city of Dublin for many years, replied for the guests, and spoke of the many landmarks which he found unchanged. He was followed by Alderman HUBBARD CLARK, who made the speech of the evening by telling droll stories linked only by the phrase "and that reminds me."

Sir WILLIAM WHEELER proposed "The President" who, he said, was to be seen at his best at the meetings for the reorganisation of the Dublin hospitals, where he was an illustration of the proverb that the winds and the waves favour the best navigator. In replying, Prof. MOORHEAD revealed that the meeting owed its origin to the proposer of this toast. For himself he believed that the medical profession would play an important part in the reconstruction of the world. Diodorus, writing of ancient Egypt, said that the manner of life there was so well arranged that it seemed to have been organised by a physician rather than a lawgiver, and Disraeli had expressed the same

idea when he said that public health was the foundation on which depended the happiness of the people and the power of a nation.

HONORARY FELLOWSHIPS AND DEGREES

During the meeting honorary fellowships or degrees were conferred upon a number of medical men :

UNIVERSITY OF DUBLIN (TRINITY COLLEGE)

D.Sc.—Dr. Gordon M. Holmes and Prof. Emil Novak.
M.D.—Dr. E. K. Le Fleming and Mr. H. S. Souttar.

NATIONAL UNIVERSITY OF IRELAND

LL.D.—Prof. T. G. Moorhead and Sir Humphry Rolleston.
D. Litt.—Dr. T. P. C. Kirkpatrick.
M.D.—Sir Henry Brackenbury and Sir Robert Bolam.
D.Sc.—Sir Edward Sharpey-Schafer (in absentia), Prof. Joseph Barcroft, Dr. Rufus Cole (in absentia), Prof. Dean Lewis, and Prof. T. H. Milroy.
M.Ch.—Sir Hugh Rigby and Mr. J. F. O'Malley.
D.Sc. (Public health).—Prof. J. M. Beattie and Sir John Moore.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Hon. Fellowship.—Lord Dawson of Penn.

ROYAL COLLEGE OF SURGEONS IN IRELAND

Hon. Fellowship.—Prof. Dean Lewis, president of the American Medical Association.

ROYAL ACADEMY OF MEDICINE IN IRELAND

Hon. Fellowship.—Mr. N. Bishop Harman, Dr. W. G. Willoughby, and Dr. C. O. Hawthorne.

SECTION OF OBSTETRICS AND GYNÆCOLOGY

THE opening meeting of this section on July 26th, under the presidency of Dr. BETHEL SOLOMONS, was devoted to a discussion on

Puerperal Sepsis

Dr. LEONARD COLEBROOK (London), who read a paper on ætiology and prevention, stated that nearly 20 per cent. of all deaths due to childbearing followed normal labour. From investigations and experiments the tentative conclusion was warranted that in the majority of cases the source of the infecting organism was the throat or nose of the attending doctor or nurse. Less commonly the patient's own throat or nose was the source. Nasal infections were specially important because hæmolytic streptococci might easily be conveyed on the fingers in tenacious nasal secretions. Handkerchiefs were a great source of danger in a labour ward. Investigations had shown that 5 to 30 per cent. of all persons attending midwifery cases carried the hæmolytic streptococcus in the throat or nose. In spite of this, most of these carriers were not specially dangerous. Only those who yielded a profuse growth of streptococci, or who had recently had a tonsillitis, laryngitis, or antral infection should be excluded from contact with parturient women. The dangerous carrier must always be watched for. The use of efficient masks would help to reduce the risk of droplet infection. Every patient who developed pyrexia should have a vaginal swab examined, and if hæmolytic streptococci were present she should be isolated from all other lying-in women. Every midwifery hospital should have access to a bacteriological laboratory of good repute. Patients should be warned of the danger of conveying infection to the vulva on the fingers. He had carried out a series of experiments to determine the efficiency of skin sterilisation by different methods. A solution of common yellow soap killed hæmolytic streptococci more quickly than the usual strength of lysol or perchloride of mercury ; toilet soaps were much less active. In heavy contaminations soap was not sufficient. The most reliable method was to scrub the hands, and then to rub into the skin a teaspoonful of neat Dettol, or a 30 per cent. tragacanth paste of dettol. Skin so treated (or skin painted with a 2 per cent. solution of iodine) remained bactericidal for several hours. Gloves were easily sterilised on the hands by soaking for two minutes in 2 per cent. solution of dettol, lysol, or iodine, or in a 0·2 per cent. solution of biniodide of mercury in spirit.

DIAGNOSIS

Mr. L. CARNAC RIVETT (London) classified the cases as follows : (*a*) local sepsis in the genital tract ; (*b*) septicæmia ; (*c*) peritonitis ; (*d*) infected thrombosed pelvic veins ; (*e*) salpingitis and pelvic cellulitis ; (*f*) infection of the urinary tract. The diagnosis of these conditions was difficult and often the classical signs and symptoms were entirely absent. He had seen at autopsy three pints of pus in the peritoneal cavity of a patient in whom peritonitis had never been suspected. In local uterine sepsis subinvolution was present, but the uterus was not always tender. In perineal infections the vulva was œdematous. In septicæmia rigors were not always present. Anaerobic as well as aerobic blood cultures must be made. The death-rate in hæmolytic streptococcal septicæmia was 80 per cent. ; in the anaerobic streptococcal type it was 20 per cent. In puerperal peritonitis pain and rigidity were rarely found. Sometimes pain was elicited by the sudden release of pressure of the examining hand. Pain could also be produced by pressing the uterus from side to side against the sacral promontory. Diarrhœa and distension were important signs of peritonitis. In early cases he advocated opening the abdomen through a midline incision 1½ in. long, and draining the pelvis. Infected thrombosed veins often escaped diagnosis ; repeated rigors were an important sign. Urinary infections were very common and often caused a sudden high temperature, sometimes associated with a rigor. In such cases pain, frequency, and dysuria were usually absent, and the diagnosis rested on immediate examination of a catheter sample of urine.

TREATMENT AND PROPHYLAXIS

Mr. E. FARQUHAR MURRAY (Newcastle-upon-Tyne) thought that too much stress had been laid on droplet infection. Parturition took place through a germ-infected area where tears and lacerations were very frequent, and it was only to be expected that sepsis would supervene in a number of cases. In the Princess Mary Hospital he had found that 68 per cent. of the staff carried the hæmolytic streptococcus in the throat, yet in 183 clean cases delivered by this team there were only three trifling and transient notifiable pyrexias believed to be due to sepsis. He did not advocate the use of masks. By strict segregation of clean, suspect, and septic cases the sepsis rate of the Princess Mary Hospital had been reduced from 6·7 per cent. to 3·6 per cent. Better organisation of the nursing service throughout the country would lower the sepsis rate. Treatment consisted of fresh air, avoidance of effort, cold sponging in hyperpyrexia, an assimilable diet, and a citrate mixture. Antiscarlet fever serum in doses of 10 to 15 c.cm., repeated on one or more occasions, appeared to be better than the older polyvalent serums. Local sepsis must be attended to ; it was present in some 45 per cent. of cases.

Dr. GIBBON FITZGIBBON (Dublin) read a short paper in which he criticised the statistics relating to the incidence of streptococci in the vagina before and

during labour, and their relation to puerperal fever. He emphasised the importance of trauma, and of prolonged ischæmia of tissues, as factors in the production of sepsis. He upheld the old antiseptic routine which had given such good results with the Queen's Institute nurses, in the East End Maternity Hospital, and in the Dublin hospitals. Practitioners with special midwifery experience should be encouraged by health authorities, and only such practitioners should be called in by midwives. He thought that intra-uterine douching was dangerous, and might cause a local sepsis to become a peritonitis.

Prof. C. G. LOWRY (Belfast) held that a woman with puerperal sepsis had the best chance of recovery if she were put under efficient nursing care in a special hospital at the earliest possible moment. Elementary rules of technique were often broken. Vaginal examinations were often made without first separating the labia and cleaning the introitus. Masks must be efficiently made and used with care. Vitamin A and D preparations increased resistance. Bruising of tissues could be avoided by a clean episiotomy. The third stage must be properly conducted if the uterus was to remain blood-tight. He himself used a post-partum vaginal douche, or intra-uterine douche if there had been manipulation. In 1187 cases so treated he had had only one death. Sedatives in the first stage would avoid premature efforts at delivery. A patient with sepsis was often profoundly anæmic. If the hæmoglobin content were under 50 per cent. repeated small blood transfusions were of value. Antiscarlet fever serum, intra-uterine glycerin, and autogenous vaccines were all of value.

Dr. JOAN ROSE (Edinburgh) gave details of her research work on the vaginal flora before and during labour, and its relation to puerperal sepsis. Individual practitioners had such limited experience of puerperal fever that there was a tendency to under-estimate the need for prophylactic measures. She advocated the use of masks and a strict routine.

Prof. R. W. JOHNSTONE (Edinburgh) made a strong plea for a united stand concerning preventive methods. The positive evidence of the danger of droplet infection was convincing, and far outweighed any negative evidence. He likened the use of a mask in obstetrics to the use of a red rear light by a cyclist. Both might frequently be dispensed with, without disaster following, but this fact did not prove that the precautions were therefore needless. He showed a graph illustrating the sepsis-rate at Edinburgh Royal Maternity Hospital. There was a striking drop following the introduction of masks.

Dr. C. M. CRAIG (Kendal) discussed the cause of the lowered resistance to infection which led to puerperal fever. Till this was known, it was misleading that statements should be made which the public interpreted as stigmatising the general practitioner.

Mr. LEONARD PHILLIPS (London) spoke of the experience of Queen Charlotte's Hospital workers in the treatment of puerperal peritonitis. The classical signs and symptoms were absent in these cases. Early operation as described by Mr. Rivett gave good results. Pyelitis was often overlooked and the ketogenic diet was very useful for it.

Dr. G. W. THEOBALD (London) protested against the dictatorship of the bacteriologist which had led to an unreasoning belief in the efficacy of masks. Trauma was an important factor in puerperal sepsis; high forceps should never be used. Midwives should not be trained to make vaginal examinations.

Dr. BETHEL SOLOMONS gave some details of the practice at the Rotunda Hospital. He did not use masks. An examination of the throat swabs of 100 members of the staff had not shown the presence of any hæmolytic streptococci. During his mastership 26,000 cases had been delivered without an outbreak of sepsis. He agreed that a person with tonsillitis or other active infection should not attend parturient women.

SECTIONS OF MEDICINE AND RADIOLOGY

On July 27th a combined meeting of the sections of medicine and radiology was held, the chair being taken first by Prof. HENRY F. MOORE and later by Dr. T. GARRATT HARDMAN, respectively president and vice-president of the sections.

Dr. JOHN PARKINSON (London) opened a discussion on

Radiology in the Diagnosis of Heart Disease

He claimed that X ray examination had a place in cardiac diagnosis because it furnished us with detailed evidence beyond the reach of percussion. The purpose of percussion was to decide the size and shape of the heart, but difficulties due to obesity and emphysema were shirked and the faith necessary for successful percussion was greater than this generation possessed; it was a valuable bedside method, but limited in scope. The main object of radiology was the same as that of percussion and, he pointed out, the heart was well placed for X ray inspection, being surrounded by translucent lung which also showed up the pulmonary artery and its branches. He stressed the protean individuality of the cardiovascular shadow. Modifications due to thoracic build and overweight might be as great as those due to disease, and therefore interpretations of the many patterns of normality were important. Radioscopy might suffice in some cases, as by turning the patient all views could be obtained, but if a permanent record was required, records of one or both oblique positions should be included. He then showed three diagrams of the three standard positions, observing that the shadow to the right above the right auricle was made by the superior vena cava, not the aorta. He pointed out that formerly clinical reference to size was mainly to the heart as a whole, measuring the width from the outer border of the left ventricle to that of the right auricle; but one should remember that the enlargement was generally regional, being a localised product of the lesion. The right ventricle might appear high on the left border and the left auricle often contributed part of the right border. He omitted discussion of the recognised methods of measuring the cardiac outline, as other speakers were to mention these. Though the cardiothoracic ratio would probably come into general use, it should not be applied without allowing for height and weight. He admitted that a thorough X ray examination might not determine the presence of slight enlargement without the use of other means of making a diagnosis. The findings of radiology must be related to the whole clinical picture. He noted that cardiac enlargement was often simulated by the displacement due to scoliosis. It was more important to decide whether the heart was misshapen by pathological change than whether it was enlarged as a whole. Its shape was mainly determined by the relative enlargements of its several components. The size of the aorta might be diminished as a result of mitral stenosis and the pulmonary artery in congenital malformations. Dr. Parkinson showed how X ray findings could be correlated with morbid anatomy, demonstrating a photograph of an isolated heart with mitral stenosis and pointing out its resemblance to the X ray picture recognised as typical of mitral

stenosis. He described other conditions in which the X ray picture could give definite confirmation of a diagnosis. In toxic or exophthalmic goitre after the very early stages an enlargement of the whole heart was present and often a prominence of the pulmonary artery. A case of coronary atheroma or myocardial disease might show a distinctive X ray shadow. He concluded with a warning against the practice of distressing a patient by confronting him with X ray findings as if they implied a complication which magnified his disease.

Dr. P. J. KERLEY (London) claimed that radiology had improved the diagnosis of enlargement of the heart and aorta, but in the realm of pure pathology of heart disease it had contributed practically nothing. The reasons for this failure were largely technical, including the rapid movements of the heart and the lack of knowledge of any drug which rendered the blood more opaque than the muscular wall of the heart. He stressed the value of screening, which revealed the size of the heart, variations in the position of the heart due to deformities of the bony thorax or emphysema, and also the shape of the heart and the enlargement of any of its chambers. He explained the use of orthodiagraphy, teleradiography, and kymography. With orthodiagraphy only the central ray was used, to prevent distortion on the screen. This ray was manipulated round the shadow of the heart, and was marked at suitable places. Teleradiography enabled parallel rays to be thrown at a distance of two metres; distortion was negligible. The value of kymography had yet to be substantiated. He discussed the normal heart, its relative width up to the age of 4 years, and the opacity of the great vessels. From 4 to puberty the heart shadow was of a long narrow type. In the average adult the heart was oblique. The heart-lung coefficient averaged 1 to 2. Normally there was no notch separating the auricular and ventricular shadows. He stressed the errors that could be made by unconfirmed percussion and palpation, and mentioned a complicated system of X ray measurements which was valuable in physiological investigations but rarely necessary in clinical practice. The "small heart" was more apparent than real; its appearance was due to a low diaphragm which rotated the heart slightly to the right and forward. In pregnancy as the diaphragm was raised the heart seemed to change its shape; a small heart then looked like an unusually wide heart until after parturition, when it reverted to its former shape. Dr. Kerley doubted the truth of Wenckebach's theory that the low diaphragm lessened the respiratory assistance to venous return and caused a real small heart. He suggested that the "small heart" of tuberculosis might be due to the compensatory emphysema depressing the diaphragm. The difficulties of diagnosis of slight enlargements were very great; a rapidly pulsating heart and an elevation of the left diaphragm due to abdominal distension gave a false impression of enlargement. He had yet to see a case in which X ray evidence of enlargement in early myocardial disease preceded electrocardiographic alterations. A few points in differential X ray diagnosis were worth noting. An aorta denser than the left ventricle was atheromatous. An aorta not dilated, but as high as the first costal cartilage, was atheromatous, unless displaced by lung conditions. Visible atheromatous plaques were not necessarily of serious import.

Dr. Kerley discussed characteristic alterations in congenital and valvular diseases. Mitral stenosis showed many variations, the usual loaf-shaped shadow or the enlarged left ventricle showing in the first oblique position or even overlapping the right auricle. X rays were particularly useful in the diagnosis of the complications of mitral stenosis, for example, the displacement of the œsophagus by the left auricle; enlargement of veins, not the actual displacement, was probably the cause of the associated dysphagia. An enlarged left auricle might cause paralysis of the left recurrent laryngeal by pressure between the left main bronchus and the aorta. He concluded by describing the changes in the lungs due to passive hyperæmia associated with mitral stenosis or other cardiac causes.

Dr. D. EVAN BEDFORD (London) discussed the applications of radiological examination in congenital heart disease and diseases of the pericardium in older children and adults. In congenital heart disease radiology was of the greatest value, for the defect was an anatomical deformity, not a disease of muscle. In coarctation of the aorta the scalloping of the under surfaces of the ribs was pathognomonic. Dilatation of the ascending aorta and an abnormality of the aortic knuckle might also be present. Patent ductus arteriosus and simple pulmonary stenosis both presented, usually, dilatation of the pulmonary artery; normally, in both, cyanosis was only a transient or terminal event. Patent interauricular septum showed an enormously dilated pulmonary artery and its branches; this was of great importance, especially as no other signs might be present. In Fallot's tetralogy, the commonest adult congenital lesion causing deep cyanosis from birth, a concavity was seen in the region of the atresic pulmonary artery, and the aorta was enlarged and sometimes displaced to the right. A right-sided aortic arch was sometimes associated with Fallot's tetralogy. In pericardial effusion the widened pedicle and absence of pulsation were noteworthy. It was important to take serial radiological observations in cases of effusion as the changes were much greater during absorption than those seen in the shape of the heart during improvement following cardiac failure.

Dr. J. CRIGHTON BRAMWELL (Manchester) said that the transverse diameter of the heart shadow should not exceed half the internal diameter of the thorax, but that the lie of the heart varied with the shape of the chest and the build of the subject. He mentioned formulæ by which it was possible to predict the transverse diameter of the heart from weight and height in normal healthy subjects with an accuracy of about 10 per cent.; but it was important to remember that athletes who took part in types of sport involving prolonged and severe physical exertion had unusually large hearts. On the other hand, perfectly healthy men sometimes had very narrow hearts. He believed that radiology could tell us all that we could learn from percussion and palpation regarding the size of the heart with a much higher degree of accuracy than either of these methods. It was capable of revealing slight degrees of cardiac enlargement even in obese and emphysematous subjects. Radiology's most important contribution to cardiac diagnosis was the information which it yielded regarding alteration in shape of the heart. This enabled the observer to ascertain which chambers were enlarged, and thus threw light on the cause of the enlargement.

Dr. LEONARD ABRAHAMSON (Dublin) described his routine method of radiological examination of the heart. Whilst measurements should not be invested with too much importance, they were useful records in individual cases. The cardiothoracic ratio was of more constant value in the detection of true cardiac enlargement, though there were variations, within

the normal, due to differences in the build and weight of patients. He thought it need not be feared that increasing use of instrumental methods would spell increasing dependence on such methods. On the contrary, only by the exhaustive use of instruments could we hope ultimately to emancipate ourselves from the use of an instrument in some of the conditions in which it is at present a necessity; an example of this having been achieved was in the use of electrocardiography in the diagnosis of cardiac irregularities. In a doubtful case of established mitral stenosis, visualisation of the enlarged left auricle was of great value. Syphilis of the aorta, in the absence of a diastolic murmur, was difficult, even impossible, to diagnose by clinical methods. X ray examination, showing changes in density, in shape, and in size of the aorta was invaluable. Dr. Abrahamson instanced cases in which obscure cardiac failure had been caused by retrosternal goitre. He also discussed the difficulty of diagnosing slight enlargement of the heart in disease of the myocardium, and the value of X rays in pericardial effusion.

Dr. WM. HOPE FOWLER (Edinburgh) submitted a communication on the methods of X ray in heart measurement, using an elaboration of the left postero-anterior oblique position, which had proved extremely accurate in measuring the heart and aorta. This method was found successful in determining either right or left cardiac enlargements in over 75 per cent. of his series of 73 cases in which the cardiac pathology was checked at autopsy. He mentioned the mathematical formula of Kahlstoff for determining the volume of the heart: Volume = F.T.K., where F is the superficial area of the sagittal orthodiagraph, T the largest diameter of the heart, K a constant = 0.63. In the normal person the heart volume depends on body weight. The ratio heart volume in cubic centimetres divided by body weight in kilogrammes should be 8 in the male and 7 in the female.

Dr. J. RALSTON PATERSON (Manchester) reported some work which confirmed the opinion that after exercise the heart volume diminished. Others had proved that the X ray anterior view was reduced after exercise; he had found a reduction in lateral views also. In all the cases the electrocardiogram showed no change.

Dr. T. GARRATT HARDMAN (Dublin) stressed the necessity for coöperation between the radiologist and physician.

Short Papers

Dr. M. A. CASSIDY (London), vice-president of the section of medicine, then took the chair.

Dr. E. T. FREEMAN (Dublin) spoke on the

TREATMENT OF FLUID IN THE PLEURAL CAVITY

He considered only those effusions due to infective bacteria. The tuberculous effusions might be left alone if small in quantity or diminishing within four weeks, and if not associated with marked pyrexia or cardiac or respiratory distress. An argument against removal was that the pressure of the fluid acted as a splint to the lung, but this argument did not take into account the absolute necessity of relieving intense dyspnœa and tachycardia, or of the interstitial fibrosis which frequently followed very slow absorption. He showed X rays illustrating this fibrosis.

As regards aspiration he stressed the following points. The fluid was an incidental complicating factor; the lung was all important. Chests varied, so that fixed quantities of fluid bore different relationships to the total capacity and exercised different pressures. The method employed should involve no danger or distress to the patient or risk of spread of the lesion in the lung. If possible the chest should be emptied completely. He described his method of aspiration with gas replacement. The volume of gas necessary to maintain a constant pressure was approximately two-thirds of the fluid withdrawn. In tuberculous serous effusion he used air replacement owing to its slow absorption. In purulent effusions he used oxygen or carbon dioxide, as rapid absorption and obliteration of the pleural cavity were indicated. At one time he had thought it possible to deal with most streptococcal or pneumococcal effusions by lavage, aspiration, and oxygen replacement alone, but the influenza epidemic of last winter proved that the method was sometimes insufficient, though it was the best preliminary treatment for all empyemas.

Dr. L. S. T. BURRELL (London) submitted a communication on

THE DIAGNOSIS AND TREATMENT OF BRONCHIECTASIS

The chief points in the diagnosis of bronchiectasis were: (1) the cough with sputum, often copious and offensive; (2) fever, sometimes relapsing, the sputum accumulating in the cavity causing pyrexia and toxicity; (3) hæmoptysis—common and frequently large in quantity; (4) the disease generally affected the lower portion of the lungs; (5) physical signs of cavity at the base strongly suggested bronchiectasis; (6) clubbing of fingers; (7) absence of tubercle bacilli (although the two diseases might occur together); (8) radiography after injecting lipiodol. Dr. Burrell divided the treatment into simple medical, simple special, and major special treatments. Artificial pneumothorax was rarely successful owing to adherent pleura and the failure of the cavities to collapse. Bronchoscopic aspiration gave relief but did not effect a cure; it was most useful in bilateral toxic forms. Phrenic evulsion might do harm by diminishing the force of the cough. Thoracoplasty was often disappointing. The operation of choice, where the signs were unilateral and the case severe and very distressing, was lobectomy. Under modern methods it could be performed by ligature and excision, and the mortality had been reduced to under 10 per cent.

SECTION OF SURGERY

IN this section on July 26th, with Prof. C. J. MACAULEY (Dublin) in the chair, a discussion on the treatment of

Acute Head Injuries

was opened by Mr. GEOFFREY JEFFERSON (Manchester). At the present time, he said, the treatment of head injuries was chiefly non-operative. The worst cases were not saved by routine decompression, and it was generally believed that the use of hypertonic solutions would lower pressure and replace operation in most cases. He believed that hypertonic solutions should not be indiscriminately applied, though he admitted their value if properly used. It would be better to regard every patient with a head injury as being a potential subject for operation, and to be ready to suspect not only epidural hæmorrhage but the commoner and more insidious condition of subdural hæmatoma. Among a total of 1004 patients with head injury seen at the Manchester Royal Infirmary and Salford Royal Hospital 230 died (23 per cent.). Of these, 91 (60 per cent. of the total number of deaths) died within 24 hours, and the next highest number before the end of 48 hours. Among the late deaths, those occurring after

the second or third day, subdural hæmatomas were found at post-mortem more often than they had been suspected during life. Some late deaths, however, appeared to be due, not to gross compression, but possibly to damage to centres and tract connexions by hæmorrhage, œdema, or necrosis in which histamine might play a part. Thermal crises indicated damage to the tuberal region. The great variations in behaviour of patients during recovery were probably evidences of injury to particular regions, and called for further study.

The outstanding problem in cases of head injury was traumatic stupor. Immediate anxiety was almost at an end when consciousness was regained. Patients arrived at hospital in all stages of traumatic stupor, and fell conveniently into three groups. Group A included those who were deeply unconscious or comatose, with dilated pupils, cyanosis, stertor, and flaccid limbs. These patients died rapidly, and nothing would save them. Group B comprised those patients who were recovering consciousness when they reached hospital. They could be induced to answer questions, and often did not relapse again into unconsciousness. Fractures of the skull, however, or laceration of the brain, might be present in patients falling into this group, and extra- or sub-dural hæmatoma might arise. Some of them relapsed again into unconsciousness or stupor, and it was extremely important to determine the depth of the secondary stupor and the presence or absence of localising signs. If stupor was light and no limb weaknesses could be discovered, no clot was likely to be present, but if there was the least doubt it was better to explore. Group C, consisted of patients who remained in a non-coöperative semi-stuporose condition for several days. Evidence of a unilateral lesion might be found in facial asymmetry and by examination of the abdominal and plantar reflexes. A number of these patients in whom no lateralising signs were found slowly recovered.

Patients who remained unconscious for any length of time might be assumed to have suffered severe neural damage, and even those who recovered consciousness in a few moments might have contusions which would give rise to dangerous subdural hæmorrhage. The sequence of stupor, recovery, and stupor implied the production of unconsciousness by clot. It was questionable whether the loss of consciousness was due to pressure; intracranial tumours causing great rise of pressure seldom produced unconsciousness, nor did the pressure readings of the cerebro-spinal fluid in cases of head injury bear out the teaching that stupor was due to pressure. He believed that it was usually due to contusion of the anterior parts of the hemispheres, and the restlessness and "sham rage" of some patients recalled the animal experiments in which a similar condition was produced by lesions of the frontal lobes. Left-sided frontal or temporal contusion with aphasia was very important. The patient had the air of understanding what was said but could make no reply. Failure to recognise this localising sign might cost the patient his life. The use of hypertonic solutions to restore consciousness, therefore, was not rational. The patient was unconscious because his brain was damaged generally, not because it was œdematous, and the effect of hypertonic salines was to raise the blood pressure, and, by shrinking the brain, increase the space into which hæmorrhage could occur. They were best withheld for the first day or so, and only used when manometric readings showed an increase in pressure in the cerebro-spinal fluid. They were useful in secondary œdema, arising after the second or third day. The basic state in head injury was one of generalised trauma, producing stupor; unless some new element was added, the patient would recover. Such new elements imposed on the original state he had called epiphenomena.

The classical picture of middle meningeal hæmorrhage was well known. Owing to the enforcement of the Coroners Act autopsies were no longer performed as a routine in fatal injuries and were harder to obtain than formerly. He believed this had had an unfavourable influence on the treatment of head injuries, for a missed middle meningeal hæmorrhage was no longer revealed and a salutary lesson was lost. In his series fracture was absent in five out of nine cases of subdural hæmatoma, which was important when comparing them with extradural hæmorrhage, where fracture was the rule. He considered that if there was the least sign of contralateral limb weakness or a Hutchinsonian pupil, the indication for exploration was absolute. The pulse-rate was a reliable sign of clot compression, provided the rest of the picture fitted in with the diagnosis, but was not an indication for operation taken alone.

Mr. HUGH CAIRNS (London) said that recent work seemed to indicate that traumatic stupor was due to a diffuse disruption of the neural elements in the brain. Until the patient became orientated again he should be regarded as suffering from the effects of traumatic stupor, a state in which operation could do nothing and the injection of hypertonic solution was rarely called for. The patient should be treated with rest and good nursing. To control delirium morphia could be given freely, provided that he was allowed to recover from one dose before the next was administered. He was not sure that it was always wise to follow the plan suggested by Mr. Jefferson and explore whenever a clot was suspected. He had operated in a few cases of the kind, and thought that it had sometimes turned the scale against the patient. Usually such patients were too restless for the operation to be performed under local anæsthesia, and had to be given ether, which was not good for an injured brain and might give rise to pneumonia. He believed that clinical concussion was really a mild degree of traumatic stupor. Among the epiphenomena must be included infection which was a common cause of death five or six days after a head injury; evidence of the onset would be found in the cerebro-spinal fluid. The position of the clot, he thought, was less important than the rate at which it increased in size—a rate which far exceeded that of a growing cerebral tumour. Intracranial ærocele was a complication which sometimes followed a head-on collision; it arose as a result of fracture of the frontal sinus and tearing of the dura, and was probably more common than had been supposed. Operation was essential, and the tear in the dura must be stitched or covered by a strip of fascia lata to seal it. Most of the other cases of head injury, he thought, did not call for operation, but the whole subject needed careful clinical and pathological study.

Mr. A. A. MCCONNELL (Dublin) described several cases of head injury, most of them illustrating diagnostic pitfalls. The first, however, was the case of a patient who showed extreme restlessness without localising signs, following a fall from horse. He was disorientated and had to be held in bed, but when released, got out and found and used the urinal, showing that he was able to carry out a purposive action although in a state of traumatic stupor. Another case was that of a boy who developed paresis of the right arm and leg following a kick on the head by a horse. The symptoms progressed and a diagnosis

of pontine tumour was made which was verified at autopsy. In another case headache and papill-œdema developed following a fall; post mortem a subdural hæmatoma was found—and also a cerebral tumour. Another boy fell off the runningboard of a car, vomited, developed a headache, and became drowsy. Later he was aphasic and finally became comatose with head retraction and spasms. At operation a cerebral hæmangioma was found, nothing was done and he made a complete recovery. These cases suggested that the possibility of a pre-existing lesion should be kept in mind in cases of head injury.

Prof. H. S. MEADE (Dublin) said that in his experience cases with a bad fracture and torn dura did well as a rule, while the patient with hardly any symptoms was quite likely to die. He thought it possible that the leak through the torn dura helped the patient at the outset. A rapid pulse, slowing rapidly following the injury, was an unfavourable sign; if the pulse was slow from the outset the prognosis was better. He agreed that dehydration was undesirable, and wondered whether, in cases of hæmorrhage where the brain failed to expand following the removal of clot, it might be worth while giving *hypo*tonic solutions to increase the brain volume. Patients with head injuries travelled fairly well, and he thought it was important to get them to a place where they were used to dealing with such cases, even if it meant a journey. Was it necessary to keep a patient quiet after recovery from a head injury? He found that active men, who were not out for compensation but were anxious to get back to hunting or other sports, refused to rest, and never came back complaining of headaches and dizziness. Patients who hoped for compensation were the ones who came back. He advised his hearers never to ask their patients whether they had a headache; if they had one they would soon say so. Intravenous anæsthetics, he suggested, might be useful for operation on head injuries. He had found that it was simpler to use the outer layer of the dura to close a dural tear than to put in a piece of fascia lata.

Prof. R. E. KELLY (Liverpool) remarked that in stuporose cases it was often unnecessary to use an anæsthetic at all.

Mr. A. J. WALTON (London) said that the site of the damage was of little importance compared with the rate of onset. A blow upon a peripheral nerve caused a sudden loss of function, while a slow growing tumour might compress it without causing any such loss. The same was true of the brain; a large tumour of the frontal region might exist without giving rise to any pressure symptoms. He preferred to call the results of acute injury concussion, for what else were they? The patient might be unconscious for a few seconds or for days, or might pass into coma and die. These were increasing degrees of a condition which, whatever its underlying nature, was due to immediate trauma; and therefore no operation should be undertaken unless some evidence of local disturbance arose.

Mr. R. A. STONEY (Dublin) said that in his young days the fashion had been to operate immediately upon the "acute head," and this was frequently followed by fatal results. He had reached the conclusion that as long as the symptoms were general there was nothing to be gained by operation, and when teaching in hospital he was accustomed to say: "As long as the pupils are equal and reacting to light, leave the patient alone. If they become unequal and one ceases to react, consider operation."

Sir FRANK CONNOR (Bombay) said that patients might respond differently to head injury owing to some pre-existing condition such as alcoholism. In the tropics a head injury often precipitated an attack of malaria which influenced the course of the condition unfavourably.

The CHAIRMAN said that it was important to realise that a patient might have a fractured skull without dying; the contents were more important than the bony case.

In replying, Mr. JEFFERSON begged that no one would think he was trying to bring back the "acute head." Operation for stupor alone was unjustified and wrong, and so was the injection of hypertonic saline.

MEDICINE AND THE LAW

Grave Charges Dismissed

ALLEGATIONS of unusual gravity, made against a medical practitioner, were dismissed by a bench of magistrates in one of the eastern counties last week. They concerned the doctor's relations with one of his panel patients, a domestic servant whom he was treating for housemaid's knee. The girl said that he asked her to meet him in the evening and to go for a drive in his car. Misconduct was said to have occurred on this occasion and again at his surgery next day. She said she subsequently told him she thought she was pregnant, whereupon he gave her a prescription on a national health insurance form which, according to the prosecution, contained drugs reputed to be abortifacient. The girl was said to have taken the mixture for three days without result. She alleged that she told this to the doctor who then said it might be necessary to perform an operation. She said he told her to visit a woman at an address which he gave her. The woman was "one who has done it before" and would ask no questions. One of the charges against the doctor was that of conspiring with this woman to procure abortion by administering a noxious thing; three other charges alleged that he himself unlawfully administered noxious things with intent to procure abortion. The prosecution withdrew the charge against the woman who gave evidence for the Crown. The woman's evidence was to the effect that the doctor asked her to let the girl come to her house where a certain drug was administered. The woman said she did this out of affection for the doctor; he had attended her professionally but had also been intimate with her. Both the girl and the woman were severely cross-examined as to their character, and the defence naturally stressed the fact that their evidence, being that of accomplices, was untrustworthy. The police found the girl at the woman's house of which the contents were described. The doctor, in a statement to the police, admitted having attended the girl for housemaid's knee and also for bruising and shock when she had fallen from an omnibus. He denied the allegations and said it was a case of blackmail. Before calling him as a witness, the doctor's legal representative addressed the court upon the discrepancies in the evidence and the need of corroboration. The magistrates subsequently announced that there was not enough independent evidence on which a jury would be likely to convict, and therefore they did not commit the case for trial.

The risk of relying mainly upon the testimony of accomplices is a matter to which the jury's attention is always directed. The late Mr. Justice

McCardie used to favour the defence in these cases by persuading accomplices not to give evidence for fear of incriminating themselves. Some of his colleagues, well aware of the difficulty of securing the necessary evidence for enforcing the law, took a different view. Thus English judges have illustrated the uncertainty of the law in its attitude towards the offence of criminal abortion to which the recent discussions at Dublin referred. Magistrates of course ought not to send cases for trial if it is unlikely that a jury will convict. This duty of magistrates has now become more urgent since Parliament has lately abolished the safeguard of the grand jury.

INDUSTRIAL DISEASE IN 1932

THE bulk of this year's annual report of the chief inspector of factories and workshops [1] is taken up by historical surveys noticed on another page.

The range of the departmental activities during 1932 is apparent from the fact that at the end of the year there were 157,891 factories and 90,859 workshops on the registers of the department, being an increase of 2537 factories and a decrease of 4855 workshops. The complaints received during the year numbered 3916, of which 667 dealt with matters outside the inspectors' jurisdiction. Of the remaining 2203, 1713 (nearly 78 per cent.) were substantiated on inquiry. It is noted that genuine complaints often enable inspectors to detect and rectify irregularities; the source of a complaint, or even the fact that a complaint has been made, is never disclosed to the occupier concerned. The total number of accidents reported again shows a decrease from 113,249 to 106,164 and the fatalities from 755 to 602, the decrease being attributed mainly to the continued depression of certain industries but partly to the growth of the Safety First movement. The progress made in effecting compliance with the regulations in regard to dangerous occupations such as work on asbestos, building construction, chromium-plating, cinematograph films, potteries, refractory materials, and the generation and use of electricity appears to have been satisfactory.

HEALTH CONDITIONS

The usual detailed report of the senior medical inspector, Dr. J. C. Bridge, is replaced by a short section which, however, contains matter of great interest, notably the occurrence of groups of cases of cancer of the interior of the nose and of the bladder, and a comparison of the dangers of silicosis and asbestosis after certain periods of exposure.

The number of cases of *lead poisoning* has increased by 14 from those recorded last year. This is wholly attributable to an increase in shipbreaking, which accounted for 34 cases; the number of cases caused by lead paint in the painting of buildings is 43 as compared with 64.

There were 16 cases of *anthrax*, with 1 death; from wool 11 cases (including 1 death), horsehair 2 cases, hides and skins 2 cases, and other industries 1 case. These are the lowest recorded figures for this disease in any year.

Cancer.—131 cases with 44 deaths were reported from epitheliomatous ulceration of the skin; 33 with 1 death from pitch; 37 with 18 deaths from tar; 1 from paraffin; 60 with 25 deaths from oil. Of these 60 cases from oil, 57 occurred among cotton mule spinners.

The occurrence during the past 11 years of 10 cases (9 fatal) of *cancer of the interior of the nose* amongst workers at the works of a nickel refining company was brought to the notice of the department. Inquiry was made into the occupational history of each of the workmen affected and a pathological examination of all the specimens available was undertaken by Prof. E. H. Kettle. At visits to the works nothing was disclosed to indicate any known cause to account for these cases, but the firm asked Mr. C. P. Robinson, aural surgeon to the Swansea General Hospital, to undertake a complete examination of a group of workers. His examination did not reveal any further case or any condition which would indicate a causative agent. The examination of all the workers is now being undertaken by the works surgeon. Until this examination is complete the question of industrial responsibility must remain an open one, though the very high incidence of cancer in a little recorded site is regarded as suggestive. Great improvements have been effected in the conditions of the works by the provision of modern calciners during a temporary closure; these were contemplated before the occurrence of these cases was brought to light. Fifty-three cases of death from *papilloma* and *cancer of the bladder* in Huddersfield from 1900 to 1932 have been investigated with special reference to the working history of the victims. The data so far obtained is not sufficient to determine ætiology. It is regarded as significant that of the 53 cases 28 are found among intermediate dye workers, while not more than two cases at most occurred in any other trade group over the same period.

The number of cases of *chrome ulceration* (77) shows a slight increase, that of cases of *aniline poisoning* (24) a decrease due mainly to improved conditions in the works from which a number of cases occurred in 1931. One very severe case of anilism was due to spraying the woodwork of a living room with a mixture containing dinitro-benzol, the windows being closed. Included in the cases of aniline poisoning are five due to 5-chlor-ortho toluidine. The prominent symptoms of this form of poisoning being strangury and hæmaturia, the suggestion arises of its possible association with cancer of the bladder among chemical workers.

The number of *gassing* accidents reported was 125, of which 11 proved fatal.

Dermatitis of industrial origin.—It is held to be surprising that employers in general do not make better provision for washing accommodation with hot and cold water, and for ensuring that proper use is made of the provision. This condition appears to continue at the same rate and from the same causes as in previous years, but a greater number of cases, however, are being brought to the notice of the medical inspectors.

Silicosis and asbestosis.—Full particulars are now available of 42 deaths from asbestosis or asbestosis with tuberculosis and 281 deaths from silicosis or silicosis with tuberculosis. All have been verified by post-mortem examination. It is noteworthy that:—

(1) The average duration of employment sufficient to cause a fatal degree of asbestosis was only 15·2 years as compared with 40·1 years for all cases of silicosis. The actual average length of exposure to asbestos dust was, however, still less, and not more than 13·3 years.

(2) The shortest length of exposure to asbestos dust which ultimately caused death from advanced fibrosis of the lungs was 4·4 years.

(3) Asbestosis is comparable with the more serious silicosis risks with respect to length of exposure which will cause a fatal degree of fibrosis.

The incidence of silicosis among sandblasters and the very short duration of employment in this occupation before total disablement and death occurs are matters falling for urgent consideration. An increasing

[1] Cmd. 4377. H.M. Stationery Office. 1933. Pp. 134. 2*s*.

number of firms have adopted a non-siliceous abrasive, and there seems no reason why the use of sand should not be confined to work that can be done automatically and in enclosed machines. No helmet affords sufficient protection from the fine dust generated.

INVESTIGATIONS

Trichlorethylene has recently come into very extended use following the introduction of many different kinds of plant for cleaning clothes, and for degreasing. A few cases of partial anæsthesia have occurred under abnormal circumstances, but no sign of chronic intoxication has been observed in this country where ventilation is apparently better than in cleaning works on the continent. *Carbon tetrachloride* used in much the same way does not seem to have had adverse effects on persons employed in the work; the filling of capsules with carbon tetrachloride, without exhaust, has been observed to produce headache and nausea. Attention is drawn to two cases of toxic jaundice from *arseniuretted hydrogen* evolved from wetting dross containing aluminium arsenide reported in THE LANCET (1932, ii., 1446), which are regarded as important because of the unsuspected evolution of arseniuretted hydrogen. Special measures of protection have been called for in connexion with a new process of spraying *asbestos fibre*, together with an adhesive, to the walls of a railway tunnel, and to the coating of the inside of the bodies of motor-cars. The clinical picture of bronchitis, peribronchial fibrosis, and emphysema occurring in maltmen exposed to various kinds of *dust* is not distinguishable from a similar condition which may be met with in the absence of an industrial hazard, and the precise mode of action of the offending dust is uncertain, but the dusty conditions call for improvement. Radiographic examination of a few selected workers exposed to the *dust of basic slag and talc* indicates a fibrosis in a varying degree. The absence of signs of *manganese poisoning* in 24 works where dry batteries are manufactured is gratifying, since in Germany several cases of poisoning in works of this character have occurred. In the weighing and mixing departments there is undeniable exposure to the dust of manganese dioxide, and adequate washing accommodation is an obvious need in this industry, but was not found always provided. Inquiry into the effects on health of exposure to *cellulose lacquers* has revealed little ill-health. This is attributed to vigilance in maintaining good ventilation and a reasonable temperature. A large amount of information is being collected on *industrial pulmonary disease*, which when correlated with research undertaken in various centres is expected to prove of considerable scientific value.

PARIS

(FROM OUR OWN CORRESPONDENT)

THE FRENCH SPAS

ABOUT half a million persons depend for their living on the thermal springs and hydropathic establishments of which France is justifiably proud, and the institutions are visited yearly by another half million. This activity is, accordingly, of importance from many points of view, and it is natural that the persons most directly concerned should meet from time to time to discuss the problems nearest to their hearts. The sixth congress of French watering places, held last May in Paris, gave an opening for a lively discussion on publicity, finance, and other pivotal subjects. According to one speaker, Dr. Mothe, only about 15 per cent. of the patients who take the waters in France come from abroad. The thermal and climatic riches of France being, in his opinion, by far the most important in the world, this ratio of only 15 per cent. suggests that foreigners are not adequately enlightened about them. In the course of 13 years the Office National du Tourisme has spent approximately 25 million francs in propaganda on behalf of this national activity—a sum which, in Dr. Mothe's opinion, showed that the office was more tourist-minded than thermally-minded. Dr. Mothe would like to see the office reorganised in such a way that propaganda at home and abroad, among the public and the medical profession, could be more effectively centralised than it is at present.

BAD DEBTS

The *Concours Médical* lately contained some correspondence about the patient who fails to pay his doctor, though unable to plead poverty. It begins with a letter from a practitioner in a small community where there are three doctors and three chemists. Bills in arrears, it is proposed, are to be handed over by these six persons to a professional debt collector, whose remuneration will consist of a certain proportion of the sums he succeeds in collecting. It is anticipated that other doctors and chemists in the neighbourhood will join in this undertaking. So far, so good. But now comes the point on which the writer is a trifle uneasy. May he and his companions, he writes, get their collector to keep a black list of non-payers, with their addresses, for future reference? One of the legal advisers of the *Concours Médical*, Dr. Paul Boudin, answers this letter in a memorandum which shows how warily the French practitioner must walk in such matters. In principle there is nothing to prevent a doctor from farming out his bad debts to a professional collector. But the bills must not be so worded as to give any indication of the nature of the disease for whose treatment payment is demanded. The bill must, therefore, be so worded that it is an open book to the patient and an enigma to the collector. If the bill is drawn up in such a way that the patient can claim that professional secrecy has been violated, the patient would be in a position to ask for a reduction or total cancellation of the account. The keeping of a black list is legitimate, but only under certain carefully defined conditions. No objection can be raised to doctors giving each other confidential information as to the financial morals of certain patients. But this information must not be communicated to a third party nor exploited so as to become the means of a general medical boycott of the patient. If a doctor is summoned to a black-list patient, not acutely ill, the doctor is perfectly in his rights in not answering the call, but he would be unwise to say: "You are on the black list, and I will not come to see you." For however much the patient may have offended in the matter of paying his doctors, they are not entitled to conspire against him so as to deprive him of all medical aid. This, at least, is the legal ruling of a case decided in 1909. The doctor summoned to a patient on the black list may, on the other hand, insist on cash payment, the refusal of which would be a valid reason for declining to give any treatment. But the doctor must not say: "I refuse to treat you because you have not paid Dr. X." Dr. Boudin also advises compilation of a black list by word of mouth—an arrangement which would not prevent each doctor from making his own written list of black sheep.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

THE CONTROL OF BOVINE TUBERCULOSIS

THE report of the Hannah Dairy Research Institute at Kirkhill, Ayrshire, contains some rather disconcerting facts about the spread of tuberculosis. Their investigation has been conducted in concert with the Department of Health for Scotland and the public health departments of Edinburgh, Glasgow, Dundee, and Aberdeen—all under the financial adjustment of the Medical Research Council. When the full report is ready it will be interesting reading. The unsatisfactory nature of the existing milk-supply is emphasised; "bulking" is found to have a profound effect in increasing the percentage infection of milk, and there is an urgent need for the proper control of methods of commercial pasteurisation if this process is used for reducing infection. The report emphasises the outstanding value of maintaining tuberculin-tested herds as a means of safeguarding the milk supply. It was found that 20 out of 28 herds that adopted the suggested eradication method were free from infection after three years' testing; the number of reactors in the remaining eight herds was reduced from an average of 50 per cent. to an average of 24 per cent. In two other herds included in the scheme, in which, however, no proper precautions were taken to limit the spread of infection, the proportion of reactors increased from 42 per cent. to 58 per cent. As to pasteurisation, the report holds that, while the nutritive value of raw milk may be slightly impaired, the deficiency may be made good by the addition of small quantities of vitamin concentrates.

A HOSPITAL'S APPEAL

The Edinburgh Royal Infirmary appeal was for £500,000; but the time was unfortunate. The objects in view were the purchase of the site of George Watson's Boys' College; the provision of a combined maternity and gynæcological hospital of 240 beds; the reduction of the waiting-list and the erection of a new nurses' home along with accommodation for the domestic staff. The Royal Infirmary contains to-day over 1000 beds. The new extensions were urgently required, and the arrangement with the Simpson Memorial Hospital promised to be the groundwork of a strong maternity and gynæcological unit. But the appeal has brought forth only about £260,000. Possibly the sum will reach £300,000. But, in view of all the circumstances, the managers now propose to provide only a maternity hospital of 122 beds (instead of 240 beds as first suggested) and to erect the new nurses' home. Some new beds must be postponed; but an auxiliary institution accommodating 36 patients requiring special treatment has already been opened at Murrayfield and has set free the corresponding number of beds at the infirmary. When the new pavilion for dermatological and venereal diseases is erected, 40 additional beds in the present surgical department will become vacant. It is understood that the managers, in order to reduce their waiting-list, are considering sympathetically coöperation between the infirmary, the municipal hospitals, and the county hospitals in the south-eastern area of Scotland. The relative failure to collect a sufficient sum for the whole programme must be taken as an indication that the community is looking towards the new municipal developments as essential parts in the hospital extensions of the ensuing generation. It would be disastrous to see the municipal institutions and voluntary institutions run not as parts of an organic whole, but as rival concerns. The long waiting-list will ultimately compel a better administrative integration.

LONDON COUNTY COUNCIL
LIST OF CONSULTANTS

THE list of consultants who have now been appointed to the various units and groups of L.C.C. hospitals is set out below. It will be seen from the table that a large number of the appointments are for one session weekly.

In order to show the important liaisons which these appointments bring in their train, we have noted in brackets after the name of each consultant or in a separate column of the Tables the principal voluntary hospitals to which he is attached as a member of the honorary staff. These lists understate the liaisons effected, for the non-permanent teaching posts at medical schools—for example, as assistant to a professional unit—held by several of the junior consultants are not included. The staff appointments have mostly been taken from the Medical Directory, 1933, which was issued more than six months ago, and may therefore not all be up to date; for reasons of space only one degree or qualification has been set out.

It will be seen that members of the staff of all the teaching hospitals and most of the London general and special voluntary hospitals are represented.

Special Hospitals or Units

BERKELEY, COMYNS, F.R.C.P. (Middlesex, cons.).
Gynæcologist, radium centre, North-Western.

DIXON, P. D. (MISS), M.B. (Mrs. C. E. Wise).
Obstetrician, Sheffield-street.

WYATT, J. M., F.R.C.S. (St. Thomas's; Grosvenor).
Obstetrician, North-Western.

LAYTON, T. B., M.S. (Guy's).
Otologist, fever hospitals.

HALL, D. W. (MISS), F.R.C.S. (E. Garrett Anderson), and
CANN, R. J., M.S. (Evelina).
Asst. otologists, fever hospitals.

MAYOU, M. S., F.R.C.S. (Bolingbroke; Cent. Lond. Ophth.).
Ophthalmologist, St. Margaret's and White Oak.

MACLEOD, J.M.H., F.R.C.P.(Char. X.; cons.: St. John's Skin).
Dermatologist, Goldie Leigh and other hospitals.

SHANKS, S. G., M.D. (P. of Wales Gen. Hosp., Tottenham).
Radiologist, Goldie Leigh.

NABARRO, D. N., F.R.C.P. (H. Sick Childr.; Lond. Jewish).
Physician for congenital syphilis, St. Margaret's.

TRETHOWAN, W. H., F.R.C.S. (Guy's; Roy. Nat. Orthop.).
Orthopædist, Queen Mary's Hosp. Childr., and VII.

BRITTAIN, H. A., M.Chir.
Surgeon, St. Luke's, Lowestoft.

STEVENSON, R. SCOTT, F.R.C.S. Edin. (Metropolitan), and
GRIFFITHS, J. I., F.R.C.S. (Queen Mary's, Stratford).
Ear, nose, and throat surgs., med. tuberc. hospitals.

GILLIES, SIR HAROLD, F.R.C.S. (St. Bart.'s).
Hon. chief surg., plastic surg. unit, Hammersmith.

KILNER, T. P., F.R.C.S. (H. Trop. Dis.; East Lond. Childr.).
Plastic surgeon, plastic surg. unit, Hammersmith.

MCINDOE, A. H., M.S. (Hosp. for Trop. Diseases).
Asst. plastic surg., plastic surg. unit, Hammersmith.

KERRIDGE, A. R. (MISS), M.R.C.S. (P. of Wales, Tottenham; Bolingbroke),
LEWIS, I. N., M.R.C.S. (St. George's; Metropolitan),
MACHRAY, ROBERT, M.B. (Westminster),
MAGILL, I. W., M.B. (Westminster; Brompton), and
RAIT-SMITH, BRIAN, M.R.C.S.
Anæsthetists for plastic surg. unit, Hammersmith.

BROCK, R. C., F.R.C.S.,
EDWARDS, A. TUDOR, M.Chir. (Westminster; Brompton),
NELSON, H. P., F.R.C.S.,
O'SHAUGHNESSY, L. F., F.R.C.S., and
ROBERTS, J. E. H., F.R.C.S. (St. Bart.'s; Brompton),
Thoracic surgs., med. tuberc. hosps., and St. James', &c.

HARKNESS, A. H., M.R.C.S. (St. Peter's).
Venereal diseases specialist, St. Charles'.
NICOL, HAMISH, F.R.C.S. Edin.
Venereal diseases specialist. St. Stephen's.

The following lists show appointments to the various groups of hospitals (I–VII). The roman figures indicate the group and the small figures following them—e.g., VI [4]—show the hospital or hospitals to which the specialist will normally be allocated. These hospitals are :—

GROUP I
1. St. Charles'.
2. Hammersmith.
3. Paddington.

GROUP II
1. St. Luke's. Chelsea.
2. St. Stephen's.
3. Fulham.
4. St. Mary Abbot's.

GROUP III
1. St. Pancras.
2. St Mary. Islington.
3. New End.
4. Highgate.
5. Archway.

GROUP IV
1. St. George-in-the-East.
2. St. Peter's.
3. Mile End.
4. St. Andrew's.

GROUP V
1. Hackney.
2. Bethnal Green.
3. St. Leonard's.

GROUP VI
1. St. Olave's.
2. Lewisham.
3. St. Alfege's.
4. St. Nicholas.

GROUP VII
1. Dulwich.
2. St. Giles'.
3. Lambeth.
4. St. James'.
5. The Downs Hosp. for Children.
6. Norwood Hosp. for Children.
7. Queen Mary's Hosp. for Children, Carshalton.

Thus the figures IV [1 3] mean that the allocation is to St. George-in-the-East and Mile End Hospitals, both of these being in Group IV. Where the group number alone is given, the allocation is to the whole group.

Dermatologists

Name.	Voluntary hospital to which attached.	L.C.C. group.	Wk. S.*
BAMBER, G. W., M.D.	Miller ; Vict. Childr.	III	2
BRAIN, R. T., M.D.	Evelina.	IV	2
DRAKE, J. A., F.R.C.P.	King's College.	VII [1 2]	1
FORMAN, LOUIS, M.D.	Guy's ; Lond. Jewish.	VI	2
FRESHWATER, D. H., M.D.	St. George's.	II [1 2]	1
O'DONOVAN, W. J., M.D.	London ; St. Paul's.	VII [3 4]	1
SCOVELL, J. (MISS), M.D.	London Skin.	V	1
THOMSON, M. S., F.R.C.P.	King's Coll. ; Belgrave.	II [3 4]	1
WIGLEY, J. E. M., M.B.	Char. X.; St. John'sSkin	I	1

Ear, Nose, and Throat

CAPPS, F. C. W., F.R.C.S.	St. Bart.'s.	V [1]	1
CAWTHORNE, T. E., F.R.C.S.	King's Coll. ; Cheyne.	VII [1 3]	1
COLLIER, D. J. (MISS), F.R.C.S.	South London.	VI [1]	1
JENKINS, G. J., F.R.C.S.	King's College.	I [1]	1
		VII [3]	1
JORY, N. A., F.R.C.S.	Royal North.	V [2 3]	1
MASON, F. C., M.S.	Seamen's.	VI [2 3 4]	2
MCLAGGAN, J. D., F.R.C.S.	R. Free; C. Lond. Thr.	IV	2
MILL, W. A., M.S.	St. Thos.; C. Lond. Thr.	II	2
PETERS, E. A., F.R.C.S.	Univ. Coll. ; Boling.	VII [4]	1
ROBERTSON, G.D., F.R.C.S.	St. Mary's.	I [2 3]	1
RYLAND, A., F.R.C.S. ED.	Centr. Lond. Throat.	III	2

Obstetricians and Gynæcologists

BASDEN, M. M. (MISS), F.R.C.S.	S. Lond. ; Marie Curie.	III	1
BROWN, R. CHRISTIE, M.S.	Samar. ; C. of L. Mat.	IV [1 2]	1
ELLISON, J., F.R.C.S. ED.	Chelsea H. Women.	VI [3 4]	1
FORSDIKE, SIDNEY, F.R.C.S	H. Women, Soho.	II [1 2]	1
GRAY, A. O., F.R.C.P.	Charing X. ; Hamps.	I [1 2]	1
MCALLISTER, A. C., F.R.C.S.	Samar. ; R. Waterloo	IV [3 4]	1
MCCULLAGH, W. MCK., F.R.C.S.	Samar. ; Metrop.	V [1]	1
OLDERSHAW, M.H., F.R.C.S.	H. for Women, Soho.	VII [1 2]	1
PHILLIPS, L. G., M.S.	H. Wom., Soho; Q.Charl.	VII [4]	1
ROY, D. W., F.R.C.S.	St. George's ; Samar.	VI [1 2]	1
THEOBALD, G. W., M.D.		II [4]	1
WALKER, A. L., F.R.C.S.	C. of L. Mat. ; Miller.	VII [3]	1
WHITE, NORMAN, F.R.C.S.		V [2 3]	1
WILLIAMS, LESLIE, M.S.	St. Mary's ; Qu. Charl.	I [3]	1
		II [3]	1

Ophthalmologists

Name.	Voluntary hospital to which attached.	L.C.C. group.	Wk. S.*
BICKERTON, J. M., F.R.C.S.	King's Coll. ; Roy. Eye.	VI [1 2]	1
CARDELL, J. D. M., F.R.C.S.	Cent. Lond. Ophth.	II [3 4]	1
JEREMY, H. R., F.R.C.S.	London.	IV	2
JOSEPH, H. M., M.B.	Miller.	III [1 2]	1
LETCHWORTH, T.W., F.R.C.S	Hampstead ; Roy. Eye.	V	2
LINDSAY, W. J., M.D.		VII [1 2 4 5]	2
MARSHALL, J. C., F.R.C.S.	West. Ophthal.	VII [3]	1
PENMAN, G. G., F.R.C.S.	R.North.;R.Westm.Oph	III [3 4 5]	1
RIDLEY, F. T., F.R.C.S.	Cent. Lond. Ophth.	I [2 3]	1
RYLEY, C. M., B.CHIR.	Miller ; St. John's.	VI [3 4]	1
SORSBY, ARNOLD, F.R.C.S.	Hampstead; Roy. Eye.	VII [4]	1
TAGGART, H. J., F.R.C.S.	West. Ophthal.	II [1 2]	1
WHITTINGTON, T. H., M.D.	Royal Waterloo.	VII [6]	1
WOLFF, EUGENE, F.R.C.S.	Royal North.; Seamen's	I [1]	1

Orthopædists

BURNS, B. H., F.R.C.S.	St. George's ; Belgrave	IV [1 3]	1
BURROWS, H. J., F.R.C.S.	Miller.	V	1
DAVIS, K. J. A., F.R.C.S.	Metrop.; E. Lond. H.Ch.	VII [2 3]	1
ELLIS, V. H., F.R.C.S.	St. Mary's; R.Nat.Orth.	IV [3 4]	1
LAMBRINUDI, C., F.R.C.S.	Guy's.	VI [3 4]	1
LINDSAY, E. A., F.R.C.S.	Miller.	VI [1 2]	1
LLOYD, E. I., F.R.C.S.	R. North.; H. Sick Ch.	I	1
PATON, R. Y., F.R.C.S.	P. Louise; R. Nat. Orth.	III	1
ROCYN-JONES, A., F.R.C.S.	R. Nat. Orth.	II [3 4]	1
SINCLAIR, MEURICE, M.B.		II [1 2]	1
		VII [1 4]	1
TRETHOWAN, W.H., F.R.C.S.	Guys ; R. Nat. Orth.	VII [4]	1

Pædiatrists

COCKAYNE, E. A., F.R.C.P.	Mid'x. ; H. Sick Ch.	III [4 5]	1
COPEMAN, W.S.C., M.R.C.P.	SS. John and Eliz.	III [2 3]	1
HAMILTON, C. K., F.R.C.P.	Charing X.	I	1
HARRIS, C. F., F.R.C.P.	St. Bart.'s.	V	1
LIGHTWOOD, R. C., M.D.		VII [3 5]	1
OWEN, S. A., F.R.C.P.	W. Lond. ; Q. H. Ch.	IV [1 3]	1
SCHLESINGER, B. E., M.D.	R. North.; H. Sick Ch.	VI [1 2]	1
SHELDON, W. P. H., F.R.C.P.	King's Coll. ; Cheyne.	VII [1 2]	1
SLOT, GERALD, M.D.	Royal Waterloo.	VI [3 4]	1
SMITH, E. BELLINGHAM, F.R.C.P.	St. George's.	II [3 4]	1
SMITH, JEAN (MISS), M.D.	Princess Louise.	II [1 3]	1
TALLERMAN, K. H., M.D.	London ; Padd. Green.	IV [3 4]	1
WYLLIE, W. G., F.R.C.P.	Westm. ; H. Sick Ch.	VII [4]	1

Physicians

ABRAHAMS, ADOLPHE, F.R.C.P.	Westm. ; Hamps.	II [2 3]	2
BOLDERO, H. E. A., F.R.C.P.	Middlesex ; Evelina.	III [5]	1
BOURNE, GY., F.R.C.P.	St. Bart.'s ; K. George.	V [1]	1
BURNFORD, J., F.R.C.P.	W. Lond. ; Lond. Jewish	II [4]	1
CLARK-KENNEDY, A. E., F.R.C.P.	London.	IV [1]	1
DAVIDSON, M., F.R.C.P.	Miller ; Brompton.	II [1]	1
EAST, C. F. T., F.R.C.P.	King's C. ; Woolwich.	VII [2]	1
GAINSBOROUGH, HUGH, F.R.C.P.	St. George's; L. Jewish	III [1]	1
GOSSE, A. HOPE, F.R.C.P.	St. Mary's; Brompton.	I [1]	1
HAMILL, PHILIP, F.R.C.P.	Metrop.; St. And., D.H.	VI [3 4]	2
HICKLING, R. A., F.R.C.P.	Charing X.	I [2]	1
HUNT, T. C., D.M.	St. Mary's.	VI [1]	1
LAKIN, C. E., F.R.C.P.	Mid'x. ; Lond. Fever.	VII [3 4]	2
LINNELL, J. W., M.D.	Metropolitan.	IV [4]	1
LLOYD, W. E., M.D.	Westm. ; Brompton.	V [3]	1
NEWMAN, C. E., F.R.C.P.	King's Col. ; Belgrave.	VII [1]	1
OWEN, S. A., F.R.C.P.	W. Lond.; Queens H.Ch.	IV [2 3]	2
PINCHIN, A. J. S., F.R.C.P.	Hamps. ; Vict. Park.	III [3 4]	1
POULTON, E. P., F.R.C.P.	Guy's.	VI [3]	1
ROLES, F. C., M.R.C.P.	Nat. Temperance.	V [3]	1
WARD, G. E. S., F.R.C.P.	Middlesex.	III [3]	1
WILSON, C. M., F.R.C.P.	St. Mary's.	I [3]	1

Radiologists

BERRY, H. M., M.D.	Roy. Masonic.	I [3]	2
BRACKEN, J. P., M.R.C.S.	Weir Hosp.	VI [2]	3
COLLINS, H. W., M.D.		VII [4]	3
CRICHLOW, T., M.R.C.S.		IV [3]	2
DANIELS, J. J. N., M.B.		II [3]	2
HALLETT, DENYS, M.B.	Qu. Mary's, Stratford.	V [3]	2
HOLDSWORTH, E. E., M.B.	Charing Cross.	VI [3]	3

Radiologists—(*continued*)

Name.	Voluntary hospital to which attached.	L.C.C. group.	Wk. S.*
HOPE, M. E. (MISS), M.R.C.S.	Royal Northern.	VII [1]	2
LYNHAM, J. E. A., M.D.	Mount Vernon.	II [4]	2
MONTGOMERY, S. K., M.D.	Middlesex ; Brompton.	I [2]	2
MUIR, JOHN, M.B.		V [1 2]	6
MURRAY, R. G., M.D.	St. Mary's W. & Ch.	I [1]	2
NICHOLAS, F. G., M.B.	Middlesex.	II [1]	2
RAE, L. J., M.B.		VI [4]	2
RAYNER, F. L., M.R.C.S.		III [2 3]	3
SIMON, GEORGE, M.B.		VII [2]	2
THIERENS, J. P., M.B.	Mid'x. ; Padd. Green.	IV [4]	3
WEBSTER, J. H. D., M.D.	Middlesex.	III [4 5]	2
WHITE, E. M. (MISS), M.R.C.S.	E. G. A.	II [2]	2
WILSON LEE, J. E., M.B.		IV [1 2]	4
YEO, K. J., M.B.	Univ. Coll. ; St. John's.	VI [2]	3

Surgeons

BOYD, S. A., M.S.	Hampstead Belgrave.	III [3 4]	1
COLE, P. P., F.R.C.S.	Seamen Q. Mary's, E.	V [2]	1
COPE, V. Z., M.S.	St. Mary's ; Boling.	VII [4]	1
DAVIES-COLLEY, R., F.R.C.S.	Guy's.	VI [1]	1
ECKHOFF, N. L., M.S.	Guy's ; St. John's.	VI [2]	1
EVANS, A. H., M.S.	R. Masonic ; R. North.	II [2]	1
HANDFIELD-JONES, R. M., M.S.	St. Mary's.	VII [3]	1
JOLL, C. A., M.S.	Roy. Free ; Cancer.	II [1]	1
LOVE, R. J. M., M.S.	Roy. North ; Metrop.	IV [2]	1
MARSHALL, C. J., M.S.	Charing X ; Vict. Ch.	I [1]	1
NICHOLLS, M. F., F.R.C.S.		II [3]	1
PANNETT, C. A., F.R.C.S.	St. Mary's.	I [3]	1
PERRIN, W. S., F.R.C.S.	London.	IV [3]	1
RAMSAY, R. A., F.R.C.S.	Metrop. ; Belgrave.	V [1]	1
SHATTOCK, C. E., M.S.	R. Free ; Padd. Green.	III [1 5]	1
SLESINGER, E. G., M.S.	Guy's.	VI [3]	1
STEWARD, F. J., M.S.	Guy's (Cons.).	V [3]	1
TANNER, W. E., M.S.	P. of Wales ; Evelina.	VI [4]	1
TURNER, PHILIP, M.S.	Guy's.	II [4]	1
WAKELEY, C. P. G., F.R.C.S.	King's C. ; Belgrave.	I [2]	1
WARWICK, W. T., F.R.C.S.	Middlesex.	III [2]	1
WHIGHAM, J. R. M., M.S.		IV [4]	
WILLIAMS, B. W., F.R.C.S.		VII [1]	1
WOOLF, A. E. MORTIMER, F.R.C.S.	Qu. Mary's, Stratford.	IV [1]	1

Urologists

BELL, J. G. YATES, F.R.C.S.	King's Coll.	VII [3 4]	1
CARVER, JAMES, F.R.C.S.		II	
EVERIDGE, JOHN, F.R.C.S.	King's Coll.	VII [1 2 6]	1
LOUGHNANE, F. M., F.R.C.S.	St. Mary's Wom. & Ch.	V	1
MORSON, A. C., F.R.C.S.	Hampst. ; St. Peter's.	III	1
RICHES, E. W., M.S.	Mid'x. ; SS. John & Eliz.	VI	1
ROCHE, A. E., F.R.C.S.		IV	1
WINSBURY-WHITE, H. P., F.R.C.S.	St. Paul's ; E. Lond.	I	1

Anæsthetists

Name.	Voluntary hospital to which attached.
CHALLIS, J. H. T., M.R.C.S.	London ; Golden Square.
CHURCHILL, H. J. C., M.R.C.S.	Metropolitan.
CLAYTON, J. C., M.R.C.S.	Charing X. ; Univ. College.
COGSWELL, A. P. L., M.B.	King's Coll. ; Qu. Mary's, E.
DAVIES, H. W., L.M.S.S.A.	
DODWELL, H. B., B.CHIR.	Roy. North. H. Epil. & Par.
EDWARDS, GEORGE, M.R.C.S.	St. George's ; Samaritan.
GOULD, R. B., M.B.	
GRIFFITH, M. (MISS), M.B.	Lond. Hom. ; E. Lond. Childr.
HARDY, H. W., M.R.C.S.	
HASLER, J. K., M.B.	Dreadnought ; St. Mark's.
HENSMAN, J. S., B.CHIR.	Queen's Childr.
HUDSON, M. W. P., M.B.	
ffHUNTER, J. T., M.R.C.S.	Royal Dental ; Queen's Ch.
HUTCHINSON, SAMUEL, M.R.C.S.	Univ. Coll. ; Roy. Waterloo.
JOHNSON, HENRY, L.S.A.	Charing X. ; Metrop. Throat.
KERRIDGE, A. R. (MISS), M.R.C.S.	Bolingbroke ; P. of Wales, Tottenham.
MORRIS, L. H., M.R.C.S.	
PHILLIPS, G. R., M.R.C.S.	St. Mary's : Cancer.
PRATT, F. H.	St. John's.

Anæsthetists—(*continued*)

Name.	Voluntary hospital to which attached.
ROBINSON, W. E., M.D.	Infants ; Roy. Waterloo.
SEYMOUR, E. A., M.B.	Hampstead.
SMITH, C. MOORE, M.B.	Woolwich.
SUNDERLAND, ARTHUR, M.R.C.S.	Charing X. ; Chelsea.
VESSELL, V. E., M.R.C.S.	Roy. Northern : Grosvenor.
WELLS, V. W. L., M.R.C.S.	Miller.
WHYTE, HENDERSON, M.R.C.S.	London.
WILLIAMS, K. LLOYD (MISS), M.D.	Royal Free ; E. G. Anderson.
WILLIAMS, M. E. (MISS), M.R.C.S.	Miller.

Neurologists

BRINTON, D. H., M.R.C.P.	King's Coll. ; Nat., Q. Square.
CRITCHLEY, M., F.R.C.P.	
DENNY-BROWN, D. E., M.R.C.P.	St. Thomas's.
ELKINGTON, J. ST.C., M.R.C.P.	Bolingbroke ; Nat., Q. Square.
MARTIN, J. P., F.R.C.P.	H. Epil. & Par., Maida Vale.
PRITCHARD, E. A. B., M.D.	Westm. ; H. for Epil. & Par.
WYLLIE, W. G., F.R.C.P.	

* Wk. S. = weekly sessions.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdr. A. H. Harkins to be Surg. Comdr.

The following appointments are notified : Surg. Comdrs. P. L. Gibson to *President*, for course, and G. G. Newman to *Vivid*.

Surg. Lt.-Comdrs. A. E. Phillips to *Suffolk* and E. T. S. Rudd to *Victory*, for Portsmouth Barracks.

Surg. Lt.-Comdr. (D) E. G. Adams to *Pembroke*, for Chatham Barracks ; L. V. Donegan to *Ganges* ; S. Mawer to *Hood* ; and D. H. le Marchant to *Pembroke*, for Chatham Barracks.

Surg. Lts. C. T. Hyatt to *Pembroke*, for Chatham Infirmary, and C. G. Owen to *Cricket*.

ROYAL ARMY MEDICAL CORPS

Maj. (prov.) J. C. Collins from the secd. list is restd. to the estabt.

RESERVE OF OFFICERS

Lt.-Col. S. L. Pallant and Lt.-Col. R. J. Franklin, having attained the age limit of liability to recall, cease to belong to the Res. of Off.

TERRITORIAL ARMY

Lts. H. Baxter and P. D. Thomson to be Capts.

Lt. E. C. Ellis (late R.F.A., S.R.), J. D. Finlayson, and E. Fowler, late Offr. Cadet Sergt. (Med. Unit) Univ. of Lond. Contgt., Sen. Div., O.T.C., to be Lts.

TERRITORIAL ARMY RESERVE OF OFFICERS

Col. Sir T. Crisp English, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.

INDIAN MEDICAL SERVICE

Lt. W. Fleming to be Capt.

The provisional promotions of the undermentioned Capts. are confirmed : A. M. Fraser, M. H. Shah, J. R. Dogra, S. Narain, M. G. Saincher, B. L. Taneja, G. K. Graham, A. W. West, A. B. Guild, D. Datt, and R. T. Hicks.

ROYAL AIR FORCE

The undermentioned Flying Officers are promoted to the rank of Flight Lt. : J. A. Kersley and O. S. M. Williams.

SCOTTISH HEALTH DEPARTMENT.—Dr. Alec B. Walker, F.R.C.P. Edin., has been appointed a regional medical officer in this department. He was formerly Freeland Barbour Fellow of Edinburgh University, and for over six years has been engaged in private practice in Newtongrange, Midlothian.

CORRESPONDENCE

PROBLEMS OF SPINAL ANÆSTHESIA

To the Editor of THE LANCET

SIR,—In your last issue Dr. Howard Jones mildly protests that, in my paper on Spinal Anæsthesia published the week before, I claimed to have anticipated him in using the method which I call "volumetric displacement," and he designates "direct injection." I find on reference to that paper that I stated he uses the method of volumetric displacement. If the context should lead anyone else to the same deduction as Dr. Howard Jones let me hasten to deny any such intention. All the world knows the valuable contribution he has made to spinal anæsthesia by his writings in recent years. The method of injecting a large volume of solution without withdrawal of cerebro-spinal fluid must have occurred to many workers. Dr. Howard Jones, however, has been generally acknowledged as the originator and strong advocate of it in this country. In my previous paper (1929) to which he refers, I attempted to give an explanation of the reason for its success. I do not think it could be fairly said that my words claim priority.

In the same letter he claims, in an earlier contribution (*Brit. Med. Jour.*, 1931, ii., 488), to have originated the idea of pulsation as a cause of spread of an injected anæsthetic substance. In that paper, after declaring that there is no circulation of cerebro-spinal fluid "which would effect the immediate distribution of drugs injected," he goes on to say "waves of condensation and rarefaction are communicated to the fluid by the respiratory and cardiac impulses which may have some effect over a more prolonged period." This vague assertion, unsupported by any evidence, he now says meant "pulsation of the brain and the large arteries at the base." The identity of this with the mechanism I described is rather difficult to discern; but as both Dr. Howard Jones and I are actuated by the same desire for the discovery of truth and the progress of anæsthetic science, I feel sure he will accept my expression of regret that I did not specifically mention his priority in the conception of the volumetric method. I assure him that I should be the last to suggest that I have any claim to be regarded as the first man to perceive that the pulsating extradural vessels might have some influence on the movement of the cerebro-spinal fluid upon which the idea of "mechanical commotion" is based, a notion which, supported by experiments and clinical observations, renders the method of volumetric displacement unnecessary and undesirable.

I am, Sir, yours faithfully,

CHARLES A. PANNETT.

London, W., July 29th, 1933.

THE ROYAL SOCIETY DISCUSSION ON "EXPERIMENTAL PRODUCTION OF MALIGNANT TUMOURS"

To the Editor of THE LANCET

SIR,—Dr. J. A. Murray's opening to the discussion at the Royal Society published in your issue of June 17th is frankly disappointing. We had expected more from the director of the Imperial Cancer Research Fund than a reiteration of the so-called "irritation theory" which never was a theory of cancer since it never attempted to explain the genesis of the malignant cell, and has been discarded by most of those interested in the cancer problem. Very many different irritants have been tried but only a very few have been found to possess carcinogenic properties. Formalin, for instance, has entirely failed to produce cancer and mustard gas (dichlorodiathyl sulphide), which is a powerful irritant, not only does not produce cancer in mice, but actually inhibits the development of tar cancer in these animals. A still more convincing argument against irritation as a cause of cancer is that the most powerful carcinogenic agent yet discovered, 1 : 2 : 5 : 6 dibenzanthracene, is not an irritant, at any rate it produces no signs of irritation when applied to the skin. Criticism is surely the essence of scientific progress, and Dr. Murray's plea of *lèse majesté* is somewhat disconcerting. Why should a member of the committee under which he works be expected to consult him before expressing his views in THE LANCET?

I think Mr. Sampson Handley has drawn attention to a matter which may easily be a cause of very real danger to the best interests of cancer research, in the tendency there is for animal experimentalists to get out of touch with the surgeons and pathologists, who are dealing with the disease in human beings.

I am, Sir, yours faithfully,

J. P. LOCKHART-MUMMERY, F.R.C.S.

Harley-street, W., July 24th, 1933.

To the Editor of THE LANCET

SIR,—Mr. Handley's second letter makes it quite clear that his criticisms were not directed against the policy and conduct of this Fund. This was the only reason for my intervention and I shall not contribute further to this discussion.

I am, Sir, yours faithfully,

J. A. MURRAY,
Director, Imperial Cancer Research Fund.

July 29th, 1933.

"THE LIFE OF HAHNEMANN"

To the Editor of THE LANCET

SIR,—In your notice of Mrs. Hobhouse's "Life of Hahnemann" you maintain that vaccine therapy is contrary to Hahnemann's teaching, inasmuch as the vaccine is identical with the disease agent, not similar to it.

May I point out that the germ, taken to be the agent of the disease, is first removed from the body and grown in an artificial medium. This at once modifies its nature a little. Then, before being used as a vaccine, the organisms are killed, and another modification of their physical and chemical structure is thereby brought about. It is surely more exact, therefore, to describe the preparation as very similar to the disease agent: it can hardly be called identical.

It is interesting to find that Hahnemann discussed this very question 100 years ago in his "Chronic Diseases," where he claims that his remedy "psorin," made from the itch pustule, was so changed by preparation (trituration, &c.) as to be no longer identical, but "similar."

I am, Sir, yours faithfully,

Welbeck-street, W., July 28th, 1933. JOHN WEIR.

LACTIC ACID AS A FACTOR IN RHEUMATISM

To the Editor of THE LANCET

SIR,—May I be allowed to endorse everything that Dr. Drury Pennington has said about lactic acid in rheumatism. Percy Wilde originally observed that sweat reaction, measured when perspiration first starts, changes from acid to alkaline as clinical improvement occurs in the rheumatic state. I have checked this observation on many cases and have always found it correct. Dr. Pennington notes a

rarity of rheumatism in warm damp climate. This observation also applies to countries where hot vapour baths are part of the ordinary routine of life. He makes an interesting suggestion about physiology and rheumatism. Deficient oxidation in the tissues as a cause of local acidosis appears to me to be a condition which needs much study. In this connexion Gowland Hopkins's observations on Glutathione are particularly interesting. Further, the work of Marsh in Persia on blood lactic acid and chlorides in heat stroke deserves consideration.

I agree that one should not always think of bacteria, but I think that the study of antidotes to bodily toxins is even more important than that of the bacterial soil.

I am, Sir, yours faithfully,

HENRY W. HALES.

Portland-place, W., July 28th, 1933.

CARDIOVASCULAR SYPHILIS

To the Editor of THE LANCET

SIR,—I was much interested in Dr. Noble Chamberlain's article on this subject in THE LANCET of July 1st, since a lengthened experience with circulatory diseases has convinced me that the syphilitic element in cardiovascular diseases is not sufficiently recognised, especially in patients over 50 years of age. I desire to call attention to a sign which I have frequently noted in these cases—viz., hyperalgesia over the neighbourhood of the sternum. This is especially found in aortitis, a condition generally of syphilitic origin. The method of applying the test is this. A large needle with a blunted end or similar instrument is held at an acute angle with the chest wall well to the right of the dull area, gentle pressure is made, and the line carried across the sternum beyond the left margin of the dullness. No pain is experienced at first, but soon the patient flinches and complains of sharp pain, which ceases when the needle arrives beyond the left line of dullness. It is to be noted that this super-sensitiveness to pressure diminishes along with an improvement in other symptoms under treatment. A minor condition of puffiness (not very soft) is generally found over the sternum.

Failure to recognise the syphilitic element in these cases is partly due to the fairly healthy appearance of the patient and, when suspicion of its presence is aroused, a too implicit reliance on the Wassermann test, especially a single one. Even in spite of a negative test the patient should not be denied the benefit of specific treatment when clinical evidence warrants it. In treating these cases I have found iodides the most reliable drug, aided by a two to three weeks' addition of half drachm doses of liq. hyd. perchlor. The dose of iodide may be increased from grs. 5 to 20 three times a day.

I am, Sir, yours faithfully,

CHARLES W. CHAPMAN.

Wimpole-street, W., July 28th, 1933.

PUBLIC HEALTH SERVICES

Maternal Mortality

ON July 15th the National Federation of Professional Workers wrote to the Minister of Health expressing its anxiety "at the evidence to be discerned in some quarters of a dangerous desire to economise" in maternity and child welfare services. Sir Hilton Young has replied, saying that "the maintenance and development of these vital services is, by common agreement, a matter of first necessity," and promising that full advantage will be taken of the special opportunity afforded by the general survey of the health services of local authorities by medical officers of the Ministry now in progress to press for necessary developments. He adds: "Publicity has been given to a statement that there has been a recent 'deplorable increase' in the maternal death-rate. The deaths per 1000 live births during 1932 were indeed 4·21 as compared with 4·11 in 1931, an increase of 0·01 per cent. of live births. The rate for 1932 was, however, lower than that for the three preceding years, 1928–30, which were: 1928, 4·42; 1929, 4·33; 1930, 4·40. . . It is indeed a matter of concern, with which we cannot be satisfied, that the maternal mortality-rate, although it has shown no increase of any statistical significance, has not shown the same marked and satisfactory fall that has been shown of late years both by the general death-rate and notably by the infant mortality-rate. It is this that makes it necessary to press ahead wherever necessary with raising the standard of the relevant services. But it can serve only to weaken our attack upon the evil to attach an exaggerated significance to minor variations in the rate, and to attribute them to causes with which they are wholly unconnected." The number of antenatal clinics increased by 84 during 1932, and there was an addition of 274 maternity beds during the year. "These facts," the Minister claims, "show that local authorities are continuing to improve and increase the maternity services."

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 22ND, 1933

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 4 (last week 15); scarlet fever, 2384; diphtheria, 827; enteric fever, 62; acute pneumonia (primary or influenzal), 466; puerperal fever, 46; puerperal pyrexia, 103; cerebro-spinal fever, 22; acute poliomyelitis, 14; acute polio-encephalitis, 1; encephalitis lethargica, 8; dysentery, 2; ophthalmia neonatorum, 89. No case of cholera, plague or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 25th–26th was as follows: Small-pox, 27 under treatment, 0 under observation (last week 33 and 0 respectively); scarlet fever, 2120; diphtheria, 1627; enteric fever, 18; measles, 573; whooping-cough, 390; puerperal fever, 29 (plus 12 babies); encephalitis lethargica, 256; poliomyelitis, 1; "other diseases," 209. At St. Margaret's Hospital there were 21 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 3 (2) from enteric fever, 17 (2) from measles, 9 (2) from scarlet fever, 21 (12) from whooping-cough, 32 (10) from diphtheria, 50 (6) from diarrhœa and enteritis under 2 years, and 12 (1) from influenza. The figures in parentheses are those for London itself.

Ashton-under-Lyne reported the only death from enteric fever outside London. Measles was fatal in 4 cases at Liverpool, 2 each at South Shields and Birmingham. Four deaths from diphtheria occurred at Liverpool, 2 each at Croydon, West Ham, and Huddersfield. Of the deaths from diarrhœa outside London 14 were reported from Liverpool and 3 from West Bromwich.

The number of stillbirths notified during the week was 260 (corresponding to a rate of 39 per 1000 total births), including 46 in London.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

The Summer Adjournment

BOTH Houses of Parliament adjourned for the summer recess on Friday, July 28th. They will reassemble on Nov. 7th unless summoned earlier to deal with matters of urgent public importance.

The Royal Assent was given in the House of Lords to a number of Acts passed during the past session, including the Appropriation Act, the Local Government and Other Officers' Superannuation (Temporary Provisions) Act, the Ministry of Health Provisional Order Confirmation (South Somerset Joint Hospital District) Act, the Ministry of Health Provisional Order Confirmation (Wath, Swinton and District Joint Hospital District) Act, the Manchester Royal Infirmary Act, the Samaritan Free Hospital for Women Act, and the Salford Corporation Act.

Local Government and Other Officers' Superannuation

On Tuesday, July 25th, the House of Lords went into Committee on the Local Government and Other Officers' Superannuation (Temporary Provisions) Bill. The Earl of ONSLOW was in the chair.

On Clause 1 (certain reductions in remuneration to be disregarded for purposes of superannuation),

The Earl of KINNOULL moved to leave out "April" and insert "July." He said that this was very reasonable amendment. It only extended the period where a reduction of wages might be disregarded for a further three months.

Viscount GAGE accepted the amendment, which was agreed to.

The Bill was read the third time and passed.

Hospitals and Motor Accidents

The Road Traffic (Compensation for Accidents) Bill, which was introduced by Lord DANESFORT, and was subsequently examined by a Select Committee, was considered in Committee by the House of Lords on July 25th.

Clause 3 of the Bill reads as follows:—

Amendment of Section 36 of Road Traffic Act, 1930, with respect to payments to hospitals.—Section 36 of the Road Traffic Act, 1930, shall have effect as though the following subsection were substituted for Subsection (2) thereof:—

"(2) Where any payment is made (whether or not with an admission of liability) by—

"(*a*) an authorised insurer under or in consequence of a policy issued under this Part of this Act; or

"(*b*) the owner of a vehicle in relation to the user of which a security under this Part of this Act is in force; or

"(*c*) the owner of a vehicle who has made a deposit under this Part of this Act,

"in respect of the death of or bodily injury to any person arising out of the use of a motor vehicle on a road or in a place to which the public have a right of access, and the person who has so died or been bodily injured has to the knowledge of the authorised insurer or such owner as the case may be received treatment at a hospital whether as an in-patient or as an out-patient in respect of the injury so arising, there shall also be paid by the authorised insurer or such owner to such hospital the expenses reasonably incurred by the hospital in affording such treatment after deducting from such expenses any moneys actually received by the hospital in payment of a specific charge for such treatment not being moneys received under any contributory scheme:

"Provided that the amount to be paid by the authorised insurer or such owner shall not exceed fifty pounds for each person so treated as an in-patient or five pounds for each person so treated as an out-patient.

"For the purposes of this subsection the expression 'hospital' means an institution which provides medical or surgical treatment for in-patients and the expression 'expenses reasonably incurred' means—

"(*a*) in relation to a person who receives treatment at a hospital as an in-patient, an amount for each day such person is maintained in such hospital representing the average daily cost per in-patient of the maintenance of the hospital and the staff thereof and the maintenance and treatment of the in-patients therein; and

"(*b*) in relation to a person who receives treatment at a hospital as an out-patient reasonable expenses actually incurred."

The Earl of HALSBURY moved to leave out the clause inasmuch as the Bill had been originally introduced by the noble Lord without the faintest idea of helping the hospitals or any one except pedestrians. He said that Lord Moynihan's representations, which had met with universal approval, led to the drawing up of a substantive Bill dealing with hospitals, and therefore he (Lord Halsbury) thought that Clause 3 ought not to be introduced into the present Bill.

Lord DANESFORT was sure that the Committee would consider it a disaster if provisions in the Bill in respect to hospitals were not included, the cost to these institutions for treating injured persons amounting to about £200,000 a year. There was general approval of the introduction of a clause to deal with in-patients in hospitals under his (Lord Danesfort's) Bill, and the Select Committee had heard a large amount of evidence on the subject, including that of Mr. J. H. Whitley, representing the King Edward's Hospital Fund and other hospitals. On Mr. Whitley's evidence a clause carefully prepared on behalf of the hospitals was put forward, and it was now incorporated in the Bill as Clause 3.

Viscount ELLIBANK said that Lord Moynihan was a party to the clause being included in the Bill.

Lord LUKE said that he moved a clause which was inserted in the Road Traffic Act, 1930, with a view to covering some of the claims of hospitals arising out of road accidents. Apparently that clause had not covered a sufficient number of claims, and therefore this clause was prepared by the British Hospitals Association and the King Edward's Hospital Fund and submitted by Mr. Whitley to the Select Committee who had inserted it in this Bill. The number of in-patients and out-patients using the hospitals in 1931 as a result of motor accidents was about 60,000. The total cost to the hospitals was estimated at £230,000. That did not show a very high average cost, but the hospitals were usually run fairly economically. It was suggested that £25 should be the maximum charge the hospitals should make, and that was now to be increased to £50. But the average of about £4 a case in 1931 did not suggest that there would be many £25 or £50 cases. If any payment was made to the hospitals in the case of accidents the hospital was not able to enforce its claim on the insurance company. The present clause put the matter right. He thought that the clause had met with the full approval of all the hospital associations who had been got together for the purpose, and it had also been approved by the Select Committee.

The Earl of HALSBURY withdrew his amendment, and Clause 3 was agreed to.

The Bill passed through Committee.

Birching of Children

The Earl of KINNOULL moved, "That in the opinion of this House the power of the courts to order the birching of children should be abolished." He said that the principle of his motion was accepted by the House of Commons in connexion with the Children's Act, but their Lordships had insisted on retaining the right of magistrates to order these birchings. The psychological effect on the children was absoluely devastating. He had letters from eminent doctors on the subject. A doctor who a short time ago was a Member of the House of Commons said: "Judicial birching of young children is disgraceful, and can only do harm." Lord Kinnoull quoted other medical opinion to the effect that great

mental harm was produced by birching, and continued: the Home Office discouraged the birching of children, and the Government wished to abolish it, but they had no power to restrain the magistrates from ordering it. He hoped that their Lordships would reverse their decision given on the last occasion.

The Earl of MIDLETON protested against a proposal to make a considerable change in the criminal law being raised at that hour of the evening on nearly the last day of the Parliamentary session.

The Earl of LUCAN, replying for the Government, said that it was hardly reasonable to suppose that the House having twice enforced their views on the Government on this matter would come to any other decision now. He therefore asked Lord Kinnoull not to press his motion.

The motion was negatived.

Factory Administration

In the House of Commons on Friday, July 28th, on the motion for the adjournment of the House for the summer recess,

Mr. RHYS DAVIES raised the question of factory administration. He said that we as a nation have attained the first century of factory inspection in this country. It was a great achievement of which they all might be proud. The factory inspectors have been the friends of the good employer and the enemy of any person who regarded his workpeople as machines. Without our factory inspectorate and the legislation which it was called upon to enforce it was quite possible that in 1933 the conditions of the 6,000,000 people employed in the factories and workshops of this country might be as bad as those of industrial Japan. But if it was true that the industrial population was growing, the inspectorate at the Home Office should not be diminished. The Home Office had hardly commenced to establish a health and medical department covering factories and workshops, and the improvement in the health of the community as a whole was much more rapid in its progress than the improvement in the welfare of those employed in factories and workshops. He was distressed to read in the report of the chief inspector of factories and workshops for 1932 that the number of accidents due to transmission machinery showed an increase from 1006 in 1931 to 1074 in 1932. The Labour Party put the blame partly on the fact that the inspectorate was not adequate. They were very much alarmed that the vacancies in the inspectorate have not been filled. It was true that as regards transmission machinery the number of fatalities had declined from 44 to 26 during the same period, but the statistics relating to human welfare in industry as a whole were not so rosy as those covering public health in general. The chief inspector made the statement that safety appliances in relation to transmission machinery were not even now in universal use. While paying tribute to the medical side of the work of the Home Office in connexion with factory inspection and industrial disease, he wanted the Office to pay more attention to the health of the operatives. During 1933 there were 37 fatalities and 10,242 non-fatal accidents in the textile industry, while in the non-textile factories there were 373 fatal and 86,648 non-fatal accidents. He gave figures showing fatalities in conversion and rolling mills, tube making, and in the chemical paints and varnish sections of industry, and pointed to figures in the report relating to docks and building operations, and to the increase in lead poisoning during ship-breaking. On the other hand it was gratifying to know that there was a decrease in the number of cases of lead poisoning in painting, from 64 cases in 1931 to 43 cases in 1932. This was due to the passing of the Lead Paint Act some years ago. The Home Office ran a disinfecting station in Liverpool with a view to preventing the spread of anthrax. He wanted to know whether that station was being kept up to date. The most pathetic case of all was industrial cancer. He quoted the figures given in the chief inspector of factories' report (p. 318), and asked whether any progress was being made in connexion with industrial cancer. He referred to the deaths from asbestosis, and to the contraction of certain disabilities as a result of noise and vibration. He considered also that more information ought to be forthcoming with regard to miners' nystagmus.

Mr. LEWIS JONES said that there was nothing which was causing so much concern to employers generally as the bravado of workpeople in industry. He suggested that the trade union leaders might coöperate with the employers in trying to instil into workpeople how important it was that they should take greater care and less risk in the works. Employers were inspired by a desire to reduce the accident rate.

Mr. TINKER said that the Home Office controlled the appointment of the medical referees under the Workmen's Compensation Act. At present only one medical referee was appointed and this gave rise to great concern among the workpeople. He asked the Home Secretary to consider the appointment of three medical referees instead of one. If the medical referee, whose decision was final, made a mistake, the workman could not get any redress, and therefore he asked that in certain cases more than one medical referee should be asked to pass judgment. He hoped that the Home Secretary would realise that he had not gone far enough yet in regard to silicosis. It had been proved lately that owing to the mines getting deeper, and consequently hotter, many of the workmen were subject to boils and other outbreaks on the body. He wanted the Home Secretary to press on with his investigations and schedule these cases so that something could be done for these men.

HOME SECRETARY'S REPLY.

Sir JOHN GILMOUR said that the report of the chief inspector showed clearly that the work was being maintained at a high standard, and he was sure that the present inspectorate did not fall short of that which had gone before. The fluctuations in the figures of accident cases were due to a great variety of causes besides increase or decrease in safety precautions, and the inferences to be drawn from a mere comparison for successive years were largely a matter of speculation. Moreover, it would be difficult to obtain satisfactory data to form the basis for very reliable conclusions as to whether particular industries were becoming less dangerous. The filling of vacancies on the staff was at present under consideration, and he understood that a new competition for this purpose would probably be held very shortly. He thought it would be found that the growth of the Safety First movement was having its effect in reducing accidents. The Home Office have ample powers to make safety regulations. New building regulations were made less than two years ago and a new code for docks had been issued in draft. As to the six-loom per weaver system, that was being very carefully watched. Any increase in accidents ought to come to light at an early stage. The prevention of lead poisoning in the ship-breaking industry presented very great difficulties, particularly as the removal of the fumes by exhaust ventilation had not been found a practical possibility. One of the problems was to devise a respirator which would really obviate the danger. Research was going on intensively into this problem. There was undoubtedly an improvement in the paint industry which would be greatly welcomed. He could assure the House that the anthrax station had been kept in operation, and in fact there was a scheme for extending the materials to be disinfected, and they hoped also to lighten the cost to industry. That scheme had just been submitted to the employers. The causes of and methods of preventing skin diseases and skin cancer presented most difficult problems on which a vast amount of research had been made; but pending further discoveries one of the most important methods of preventing skin cancer was early detection and treatment of the growth. As regarded cancer of the nose, reported as having occurred during the

past eleven years at nickel refinery works, the steps taken to discover whether the disease was caused by this occupation were dealt with in the chief inspector's report. The examination of workers was being continued, but no further cases have been reported. As regarded cancer of the bladder among dye workers, while inquiries were being continued by the factory department and others, the connexion between the disease and the occupation had not actually been established. This was one of the most difficult sections of the research work. An increasing number of firms had adopted the non-silicosis abrasive method, and the factory department were urging on employers the desirability of this or other precautions. Investigations on the effects of noises and vibration were being made by the Industrial Health Research Board, and it was the duty of factory inspectors to call attention to cases when they went round. But it was hardly true to say that all modern machines were noisy; indeed in many cases they were increasingly silent. The effect of speeding-up work and things of that nature were really matters for the Health Research Board rather than for the factory department. Many of the matters which had been discussed in that debate must depend upon scientific research. Such research was being actively pursued to-day and would be in the future. It might be that the time would arrive when further legislation would be required, but he was not in a position at present to forecast what might happen in the future, or to hold out any hope of immediate legislation.

HOUSE OF COMMONS

WEDNESDAY, JULY 26TH

Child Marriage in India

Miss RATHBONE asked the Secretary of State for India whether any steps had been taken by any of the local governments to carry out the administrative measures recommended over four years ago by the Age of Consent Committee as essential for the effective administration of legislation in restraint of child marriage; and whether, in view of the fact that the Sarda Child Marriage Restraint Act had now been nominally in force for three years and three months and was widely disregarded, he would secure from the Government of India a report upon the question of what steps should be taken to secure the enforcement and, if necessary, the strengthening by amendment of the Act.—Sir S. HOARE replied: I have not yet received the information for which I have asked regarding the administrative steps taken by local governments to give effect to the recommendations of the Age of Consent Committee. The whole question is under the consideration of the Government of India.

Fatal Motor Accidents in London

Captain DOWER asked the Home Secretary if his attention had been drawn to the increase in the number of persons killed and injured by motor vehicles in London during the first six months of this year compared with the same period of 1932; and what action, if any, he proposed to take with regard to this growing menace.—Sir JOHN GILMOUR replied: Yes, Sir, and everyone will, I am sure, deplore the increase in the number of accidents which is disclosed. The problem has many aspects, but I think it is clear that any reduction in the number of accidents must be dependent, in the main, on the exercise of greater care and a higher sense of responsibility on the part of all road users. So far as the police are concerned, the enforcement of the law and other work in connexion with road accidents already absorbs a large amount of their time and energies; and I can assure my hon. friend that they will continue to do all in their power to contribute to the safety of road users.

Scarlet Fever in Scotland

The Duchess of ATHOLL asked the Secretary of State for Scotland how many cases of scarlet fever were notified in Scotland in the first two quarters of 1932 and 1933 respectively; what were the figures for the same periods in 1930 and 1931; and, in view of the recent high incidence of the disease referred to in the annual report of the Department of Health for Scotland for 1932, what action he was taking in the matter.—Mr. SKELTON replied: There were 13,458 cases of scarlet fever notified in Scotland in the first two quarters of 1932, and 13,317 in the first two quarters of 1933. The corresponding figures for 1930 and 1931 were 6914 and 7671 respectively. My right hon. friend is much concernd at the continued prevalence of the disease. The Department of Health for Scotland have had the matter under close observation, and as a first step in the consideration of what further preventive or other measures might be taken to reduce the incidence, the chief medical officer of the department has arranged to confer at an early date with the medical officers of health of the areas most seriously affected.

THURSDAY, JULY 27TH

Public Assistance (West Ham)

Mr. GROVES asked the Minister of Health the number of men and women, separately, in receipt of in- and out-door public assistance in West Ham for 1924, 1929, and 1931 respectively.—Sir E. HILTON YOUNG replied: In 1924 and 1929 the county borough of West Ham formed part of the West Ham Union, and the desired figures are not available for these years. In the year ended March 31st, 1931, the average numbers of men and women in receipt of outdoor relief in the county borough, excluding those in receipt of domiciliary medical relief only, were 2140 and 3431 respectively. Corresponding averages are not available as regards institutional relief, but on Jan. 1st, 1931, 960 men and 764 women (excluding rate-aided patients in mental hospitals and casuals) were in receipt of such relief.

Housing Shortage in Midlothian

Captain RAMSAY asked the Secretary of State for Scotland whether he was aware that there was a shortage of houses in the Gorebridge area of Midlothian, and that a number of persons who had been unable to obtain real houses were compelled to live in Army huts; whether he would urge the local authority to take steps to deal with the shortage; and whether, in approving any housing proposals submitted by the local authority, he would secure that when the new houses were being let a preference was given to those who were at present living in Army huts.—Mr. SKELTON replied: Representations have recently been received regarding the unsatisfactory housing conditions under which certain families are living in the Gorebridge area, but except for the case of one family who are living partly in a single room and partly in a small hut nearby, and who have now been offered the tenancy of a council house at an early date, I am not aware of families being compelled to live in Army huts. The county council have been urged by the Department of Health to submit proposals for the erection of houses to replace unfit houses which should be demolished or closed, and to deal with cases of overcrowding in their area. With regard to the last part of the question, I cannot give such an assurance as is suggested.

International Sanitary Convention

Colonel ROPNER asked the Secretary of State for Foreign Affairs whether he was aware that the Argentine authorities declined to accept a certificate of fumigation of vessels by the ordinary sulphur process generally employed in this country; and whether, as the Argentine action was contrary to the International Sanitary Convention, although the Argentine signed it and the Argentine director of health undertook that their regulations would be brought into accord with it, he would take some action in the matter.—Mr. EDEN (Under-Secretary for Foreign Affairs) replied: The attention of H.M. Government has been drawn to this matter and representations on the subject are being made to the Argentine Government.

Colonel ROPNER asked the Secretary of State for Foreign Affairs whether he was aware that Spanish authorities declined to accept a renewed exemption certificate; and whether, as this action was contrary to the International Sanitary Convention, which Spain has both signed and ratified, he would state what action

it was proposed to take.—Mr. EDEN replied: I am aware that complaints have been made in the sense referred to by my hon. friend, and I understand that the International Office of Public Health has taken up the matter with the Spanish delegate.

Public Assistance (England and Wales)

Mr. GROVES asked the Minister of Health the total amounts expended upon in- and out-door public assistance in England and Wales in the years 1924, 1929, and 1931 respectively.—Sir E. HILTON YOUNG replied: The following statement gives the desired information. Statement showing the amounts expended on institutional and domiciliary poor relief in England and Wales during the under-mentioned years (excluding the maintenance of rate-aided patients in mental hospitals).

Year ended March 31st.	Expenditure other than out of loans for capital purposes, or during the year ending March 31st, 1931, other than out of capital receipts.	
	Institutional relief.	Domiciliary relief.
	£	£
1924	15,026,563	16,827,268
1929	17,176,649	15,499,129
1931	16,510,060	13,205,277

Mr. GROVES asked the Minister of Health the number of men and women respectively in receipt of in- and out-door public assistance in England and Wales for the years ended 1924, 1929, and 1931 respectively.—Sir E. HILTON YOUNG replied: The following is a statement showing the numbers of men and women in receipt of institutional and outdoor poor relief in England and Wales in the under-mentioned years (excluding rate-aided patients in mental hospitals, casuals, and persons in receipt of domiciliary medical relief only):—

Year ended March 31st.	Institutional.		Outdoor.	
	Men.	Women.	Men.	Women.
1924	87,826	69,054	212,506	341,297
1929	94,883	73,096	204,394	324,193
1931	88,603	70,185	176,501	290,487

The figures as to institutional relief relate to Jan. 1st in each year. The figures as to outdoor relief are the averages of the numbers on one day in each week in the year.

Slum-free Areas in Scotland

Sir ARCHIBALD SINCLAIR asked the Secretary of State for Scotland the names of the towns in Scotland which, in response to the official inquiry, had notified the Department of Health that they had no slums.—Sir GODFREY COLLINS replied: After the passing of the Housing (Scotland) Act in 1930 the town councils of the following burghs in Scotland indicated that no new houses were required to replace unfit houses that should be demolished or closed—namely, Aberchirder, Aberfeldy, Abernethy, Ballater, Banchory, Blairgowrie, Bridge of Allan, Burghead, Coupar Angus, Cove, Cullen, Dornoch, Elie, Fortrose, Inveraray, Invergordon, Kinross, Ladybank, Lauder, Lockerbie, Millport, Monifieth, Newport, and Portknockie. I may add that local authorities are required under the Act to submit further statements as to housing requirements in their areas at the end of 1933.

Supply of Milk to School-children

Sir ARCHIBALD SINCLAIR asked the Secretary of State for Scotland which county councils in Scotland had schemes for the supply of milk to school-children; how many school-children benefited; and what contributions were paid by the parents under each scheme.—Sir GODFREY COLLINS replied: Two education authorities in Scotland—Selkirk and West Lothian—have adopted schemes for the supply of milk to school-children under the provisions of the Education (Scotland) Act, 1930. The scheme in Selkirk provides one pint of certified milk per day for, approximately, 48 children, the cost being borne by the education authority. The West Lothian scheme, which provided milk for about 150 children at the cost of the authority, has now been discontinued. Schemes for the provision of milk apart from the 1930 Act are in operation in Edinburgh and Aberdeen. In Edinburgh one-third of a pint of Grade A (T.T.) milk per day is supplied to, approximately, 6000 school-children. Except in the case of 350 children the cost of 1*d*. per day is borne by the parents. In Aberdeen, approximately, one-third of a pint of pasteurised or of Grade A (T.T.) milk per day is supplied to, approximately, 8000 school-children. The cost to the parents is 1*d*. per day. No cost to the local authority is incurred.

Slums and Overcrowding in Glasgow

Mr. NEIL MACLEAN asked the Secretary of State for Scotland whether he was aware of the recent estimate made by architects that a minimum of 100,000 houses was required to replace existing slums and overcrowded houses in Glasgow; and whether he would take the necessary action to influence the city council to bring forward the building schemes essential to provide the necessary houses.—Sir GODFREY COLLINS replied: The answer to the first part of the question is in the negative. As regards the second part, the Department of Health have already addressed special letters to Glasgow Corporation urging them to make the utmost possible provision for the erection of houses to replace uninhabitable houses and to abate overcrowding.

Mr. NEIL MACLEAN asked the Secretary of State for Scotland if he was taking any action to compel local authorities to proceed with schemes for the replacement of slums and the accommodation of people who were at present housed in overcrowded dwellings.—Sir GODFREY COLLINS replied: Following upon the passing of the Housing (Financial Provisions) (Scotland) Act, 1933, the Department of Health, by circular dated May 30th, 1933, urged local authorities to press on with the provision of rehousing accommodation for persons living in uninhabitable houses. The department are following this up by special letters to all local authorities of areas in which, according to the available information, there appears to be need for the provision of further houses to replace unfit houses, and to relieve overcrowding.

FRIDAY, JULY 28TH

The Death of Mrs. Rosse

Mr. COCKS asked the Home Secretary whether he would inquire into the circumstances attending the death of Mrs. Rosse on Sept. 14th, 1932; if he was aware that at the inquest evidence was given that, owing to the time that had elapsed between the death and the examination of the body, it was impossible to ascertain whether or no the death was due to poisoning; if he was aware that representations were first made to Scotland Yard in December, and what steps were taken to investigate those representations; by whose directions were the inquiries closed so soon as Feb. 24th; at whose request were the inquiries reopened six weeks later; and why did the exhumation not take place until April 28th.—Sir JOHN GILMOUR replied: The circumstances were fully investigated by the coroner at the inquest concluded on July 19th, and I am aware of the evidence referred to in the second part of the question. I do not think that it would be in the public interest for me to make any statement as to the course of the investigations preceding the inquest, and I see no occasion for any further inquiry on my part.

Mr. COCKS: Why did Scotland Yard order this inquiry to be closed prematurely?

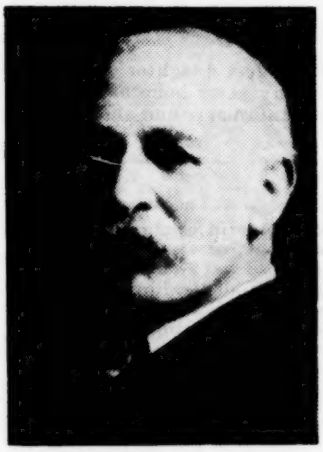
Sir JOHN GILMOUR: I have no reason to suppose that there was any desire not to make the fullest inquiry, and in fact there has been very full inquiry.

HOSPITAL EXTENSIONS.—Princess Alice, Countess of Athlone, recently opened an extension of the Princess Elizabeth Orthopædic Hospital at Exeter which has cost £14,000. The Duchess of York opened the institution in 1927.—Louisa, Countess Howe, has opened enlargements, costing £2600, of Havan War Memorial Hospital.

OBITUARY

JAMES CARMICHAEL, M.D., F.R.C.P. Edin.

Dr. James Carmichael, who died in Edinburgh on July 24th, was one of the best-known physicians in the city. A son of a distinguished Edinburgh doctor, he was born in 1843, studied under Laycock, Matthews Duncan, Sir James Simpson, and Goodsir, traditional big names in the history of the Edinburgh University medical school. He graduated in 1864 and, after a few years of practice in Burntisland, came back to Edinburgh and turned his attention to the diseases of children, soon becoming a well-known and trusted specialist. He became physician to the Royal Hospital for Sick Children, and published many papers on diseases of children, and a valuable text-book on the subject. His papers indicated the width of his clinical knowledge, being entitled, inter alia, lesions of the temporo-sphenoidal region, gastro-intestinal disorder in sucklings, bronchial catarrh in infancy, simple basic meningitis, and acute pneumonia in children. Further his interests lay in studying the family relationships of sick children, and for at least 40 years his name was one to conjure with in the management of infancy. Long before the era of child welfare centres and the like, he had done a great deal to organise social clinics dealing with infancy. He paid regular attention to the Childrens' Shelter in Edinburgh, was chairman of the Society for the Prevention of Cruelty to Children, and was for many years physician to one of the houses of Fettes College.



JAMES CARMICHAEL
[Photograph from *Evening Dispatch*

A personal friend writes: "For many years Carmichael—'Jimmie' to all his friends—had taken no public part in medicine, but with all his older colleagues his name came readily to the lips, and few things were more interesting than to walk home with him from a meeting of one of the societies and to realise the freshness of his interests. He was full of Edinburgh traditions, and could always give interesting facts, often relevant to-day, about the teachers of his youth and the development of medical organisation in the city. He was a prominent member of the Royal Company of Archers, the King's bodyguard in Scotland. He won the King's Prize twice, was a golfer, and high in the circles of Freemasonry. For many years he was the father of the Royal College of Physicians of Edinburgh."

FREDERICK SMITH, C.B., L.R.C.P., L.R.C.S.I.

LIEUT.-COLONEL, R.A.M.C. (RET.)

We regret to announce the death of Colonel Frederick Smith, which occurred on Wednesday, July 26th, in a nursing-home in London.

Frederick Smith, who saw an exceptional amount of service as an officer in the R.A.M.C., was born in 1858 at Horncastle, and educated at Dublin, where he took the double qualification in 1889. He immediately decided to enter the R.A.M.C., having had previous military experience both in the Zulu and Boer wars. At Netley he obtained the Herbert prize and the 2nd Montefiore prize, and later was assistant bacteriologist in the laboratory and gained the Parkes memorial prize. During the next two years he saw service in Sierra Leone, took part in the Mendi and Protectorate expeditions, and was awarded the medal with clasp. In 1900 the South African war broke out, throughout which he served, was mentioned in despatches and was awarded the D.S.O. for conspicuous good service. After the South African war he returned to Sierra Leone, and later saw fighting on the North-West Frontier of India, again receiving the medal and clasps. He was promoted colonel in 1912 and was due to retire, but when the European war broke out he was retained on active service. He held many important appointments during the whole war both at home and abroad. In 1915 he was appointed an A.D.M.S., and later served as D.D.M.S. in the near East. He was several times mentioned in despatches during the struggle, and for his services was appointed C.M.G. in 1916 and C.B. at the close of hostilities.

As the result of his Eastern experiences, Colonel Smith wrote a monograph on "Drainage in Tropical Countries," while he was also the author of a valuable little book entitled "Modern Bullet Wounds," written from personal knowledge acquired during the Boer war. The main message of this small volume, which formed a part of the Alexander prize essay, was to suggest a means of providing readier first aid. With the Boer war there came a great increase in our knowledge of bullet wounds, and Colonel Smith, omitting details which were the common knowledge of surgeons, added much which pointed towards a more conservative plan of treating injuries to the long bones and joints. He deprecated the hasty removal of the wounded from the field, while he urged also that all soldiers should be trained in first aid and stretcher work. He wrote recently a short history of the R.A.M.C., in which he set out in convenient and readable form the story of the Corps from earliest times—this he places at 1660—to the conclusion of the European war. Of particular interest in this little book are brief summaries of the reasons for which officers of the R.A.M.C. earned the order of the V.C.

In Colonel Smith this Service has lost a distinguished officer and an earnest advocate of its claims to high consideration.

EDWIN COLLIER GREEN, O.B.E., M.R.C.S. Eng.

At the age of 75, after a long illness, Mr. Collier Green, senior ophthalmic surgeon to the Derbyshire Royal Infirmary, died on July 30th in the institution to which he had devoted so much time and thought. Son of S. G. Green, D.D., he was born in 1858, near Rawdon in Yorkshire. After leaving school he studied architecture, but eventually entered St. Thomas's Hospital and qualified in 1881. In the following year he was appointed assistant to the house surgeon at the Derbyshire Royal Infirmary, and in due course he became house surgeon, which post he relinquished in 1887. Then he went to Moorfields to make a special study of diseases of the eye, and in 1888, when the governors of the infirmary decided to open an ophthalmic department, Collier Green was chosen as

the first honorary ophthalmic surgeon. He established and maintained an up-to-date clinic, gaining the confidence and respect of the profession in the district in this, and also in his private consulting practice, being actively engaged in both until his last illness. For a number of years he also held the post of honorary ophthalmic surgeon to the Burton-on-Trent Infirmary, and gave his services to many other institutions in Derby. During the late war he was assistant county director of the southern area of the British Red Cross Hospitals, and he later became county controller of Voluntary Aid Detachments. He was the first secretary of the Derby Medical Society, in which he always took an active interest, and was chairman of the Derbyshire division of the British Medical Association for two years in succession at the time when the National Health Insurance Act was passing into law.

A colleague writes: "Mr. Collier Green found time for an amount of administrative hospital work, the value of which cannot be over-estimated. His knowledge of hospital architecture was wide and detailed, and the board of management came to rely on him for advice, both as to the efficiency and economy of any new building or structural alterations. His long term as chairman of the house committee is a tribute to their trust in him. Perhaps above all his colleagues on the honorary medical staff would like to say that their own unity, and the harmonious understanding which has existed at all times between themselves and the board of management, is largely to be attributed to Mr. Green's wise leadership. The whole profession locally will feel his loss. His advice was sought in all sorts of medical problems, private and public, and always given with kindly wisdom. To some he seemed a link with the past, but to all an active leader, always interested in new developments and using his influence to provide the latest scientific equipments entailed by the progress of medical science."

Mr. Green married the eldest daughter of the late W. G. Curgenven, for many years honorary surgeon to the Derbyshire Royal Infirmary, and she survives him with a daughter.

MEDICAL NEWS

University of Oxford

On July 30th the following degrees were conferred:—

B.M.—J. H. B. Beal, A. Carling, I. H. Gosset, and D. A. Jennings.

Royal College of Physicians of London

At the quarterly comitia on July 27th, with Lord Dawson of Penn, the president, in the chair, the following Fellows of the College were elected officers for the ensuing year:—

Censors: Sir Charlton Briscoe, Prof. A. J. Hall, Lord Horder, and Dr. Charles Bolton. Treasurer: Dr. S. P. Phillips. Registrar: Sir Raymond Crawfurd. Harveian Librarian: Dr. Arnold Chaplin. Assistant Registrar: Dr. C. E. Newman. Library Committee: Dr. H. R. Spencer, Dr. Anthony Feiling, Dr. J. D. Rolleston, and Dr. A. E. Clark-Kennedy. Curators of the Museum: Dr. S. E. Dore, Dr. G. E. Beaumont, Dr. Maurice Davidson, and Dr. Harold Gardiner-Hill. Finance Committee: Sir Percival Horton-Smith Hartley, Dr. Thomas Watts Eden, and Sir Charlton Briscoe.

The following were elected Examiners:—

Chemistry: Mr. Herbert Lambourne and Mr. C. S. Gibson. Physics: Mr. W. H. White and Prof. F. L. Hopwood. Materia Medica and Pharmacology: Dr. K. D. Wilkinson, Prof. J. A. Gunn, Dr. E. G. Holmes, Dr. Orlando Inchley, and Dr. R. St. A. Heathcote. Physiology: Prof. D. T. Harris and Prof. R. J. S. McDowall. Anatomy: Dr. Thomas Yeates. Pathology: Dr. C. M. Wilson, Dr. C. F. T. East, Prof. M. J. Stewart, and Dr. H. W. C. Vines. Medical Anatomy and Principles and Practice of Medicine: Dr. David Forsyth, Dr. C. M. Hinds Howell, Dr. H. Theodore Thompson, Dr. A. G. Gibson, Dr. M. A. Cassidy, Dr. Reginald Miller, Dr. H. C. Cameron, Dr. A. E. Naish, Sir Stanley Woodwark, Dr. L. S. T. Burrell, Dr. I. J. Davies, and Dr. J. W. McNee. Midwifery and Diseases peculiar to Women: Mr. J. M. Wyatt, Mr. A. J. McNair, Mr. D. W. Roy, Prof. Daniel Dougal, and Prof. R. P. R. Lyle. Public Health: (Part I.) Prof. M. E. Delafield; (Part II.) Dr. G. F. Buchan. Tropical Medicine: Prof. R. T. Leiper (Pathology and Tropical Hygiene), and Dr. N. Hamilton Fairley (Tropical Medicine and Surgery). Ophthalmic Medicine and Surgery: Dr. W. J. Adie. Psychological Medicine: (Part I.) Dr. R. D. Gillespie; (Part II.) Dr. S. A. Kinnier Wilson and Dr. A. W. Petrie. Gynæcology and Obstetrics: Mr. J. P. Hedley. Laryngology and Otology: Mr. Lionel Colledge. Radiology: Mr. J. H. Brinkworth, D.Sc. (Physics), and Dr. H. K. Graham Hodgson (Radiology). Murchison Scholarship (1934): Dr. O. F. F. Leyton and Dr. J. Forest Smith.

The Baly medal, awarded every alternate year to the person who shall be deemed to have most distinguished himself in the science of physiology during the two years immediately preceding the award, was awarded to Mr. Robert Robison, D.Sc., F.R.S., professor of biochemistry in the University of London, for his distinguished work at the Lister Institute on the esters of phosphoric acid and the enzyme phosphatase and the part they play in bone metabolism. The Moxon gold medal, awarded every third year to the person who should be deemed to have most distinguished himself by observation and research in clinical medicine, was awarded to Prof. G. R. Minot, M.D., of Boston, Massachusetts, for his valuable work on diseases of the blood. The Weber-Parkes prize and medal for the best work already done in connexion with the ætiology, prevention, pathology, or treatment of tuberculosis in this country or abroad was awarded to Sir John McFadyean, M.B., late principal of the Royal Veterinary College. The Leverhulme scholarships held by Dr. J. F. Brock and Dr. S. J. Hartfall were continued for another year, and the Murchison scholarship was awarded (this year by the University of Edinburgh) to D. F. M. Batty, M.B., and Alexander Brown, M.B.

The following appointments were announced: Dr. James Collier as Harveian orator, 1934 (the forthcoming Harveian oration in October next will be delivered by Sir Thomas Lewis); Dr. J. H. Sheldon as Bradshaw lecturer, 1934; Dr. H. L. Tidy, as Lumleian lecturer, 1934; Prof. E. C. Dodds as Goulstonian lecturer, 1934; Dr. C. H. Andrewes as Oliver-Sharpey lecturer, 1934; Sir Humphry Rolleston, as FitzPatrick lecturer, 1934 and Dr. E. I. Spriggs as Croonian lecturer, 1935.

Sir George Newman and Dr. J. W. McNee were re-elected representatives of the College on the executive committee of the Imperial Cancer Research Fund, and Sir William Willcox was elected representative on the advisory committee, to be termed "The Poisons Board," under the Pharmacy and Poisons Act, 1933. Dr. R. D. Gillespie was appointed to represent the College at the third biennial conference on Mental Health to be held by the National Council of Mental Hygiene in November next.

The following candidates were admitted Members of the College:—

Patrick Clarence Anderson, M.B. N.Z.; Baij Nath Bhandari, M.D. Durh.; Anthony Curtis Byles, M.B. Lond.; Alan Barham Carter, M.B. Camb.; Bankat Chandra, M.B. Bomb.; Idris Davies, M.D. Lond.; Pierre Marcel Daville, L.R.C.P.; John Harold Follows, M.D. Liverp.; George Giglioli, M.D. Pisa; Richard Withers Gilmour, M.B. Durh.; Myer Jacob Gordon, M.D. Belf.; Edward Emile Delisle Gray, M.D. Lond.; William Pickup Greenwood, M.D. Lond.; Eric Hamilton Hudson, M.B. Camb.; Alexander Henderson Imrie, M.B. Glasg.; Beatrice Mary Joly, M.B. Lond.; Emyr Wyn Jones, M.D. Liverp.; Ronald Arthur Jones, M.B. Camb.; Charles Herbert King, M.B. N.Z.; William Lennon, M.D. Belf.; John Charles Joseph McEntee, M.D. Dub.; John Angus McLean, M.D. Melb.; Sher Mohomed Mallick, M.B. Punjab; Achanvittil Krishna Menon, M.B. Madras; Arthur William Morrow, M.B. Sydney; Robert Pierret, M.D. Lyons; Russell John Reynolds, C.B.E., M.B. Lond.; Hyman Solomon Roseman, M.D. Dub.; Norman Lloyd Rusby, M.B. Oxf.; William Walters Sargant, M.B. Camb.; Ramchandra Vishwanath Sathe, M.D. Bomb.; James Tate, M.B. Belf.; John Wakefield de Witt Gray Thornton, M.B. Oxf.; Ronald Ernest Tunbridge, M.B. Leeds; Kailash Nath Waghray, M.B. Lucknow; Leigh Thornton Wedlick, M.B. Melb.; and Paul Hamilton Wood, M.B. Melb.

Licences to practise were conferred upon 143 candidates (124 men and 19 women) who have passed the final examination of the Conjoint Board, and have complied with the by-laws of the College. The following are the names and medical schools of the successful candidates:—

R. M. H. Anning, St. Mary's; Mary C. S. Aquino, Bombay; T. P. Ayre, Durham; F. H. Barber, Birmingham; G. A.

Barker, King's Coll.; J. Bayley, St. Thomas's; R. B. Bell, Middx.; L. J. Beynon, St. George's; R. W. Billington, Camb. and Westminster; M. J. Boering, London; Beryl Bolton, Royal Free; A. R. Boney, St. Bart.'s; F. M. Braithwaite, Camb. and Manchester; P. S. Buckley, Oxford and London; E. G. L. Bywaters, Middx.; W. R. Cambridge, Bristol; J. P. Child, Oxford and St. Thomas's; G. R. Clarke, Birmingham; R. D. Clay, King's Coll.; L. Z. Cosin, Guy's; S. W. Croome, King's Coll.; P. N. Cutner, Edinburgh; Hilda M. S. Davidson, King's Coll.; J. H. Dixon, St. Thomas's; H. E. Dunstan, Durham; O. G. Edholm, St. George's; E. P. Edmonds, Oxford and London; L. R. L. Edwards, Guy's; P. R. Evans, Manchester; S. M. Evans, Camb. and St. Thomas's; E. C. Fernandes, King's Coll.; T. Fichardt, Guy's; C. Fletcher, St. Bart.'s; J. M. Flower, Westminster; T. Foulds, Manchester; N. W. Gardener, Guy's; R. G. B. Gilbert, St. Thomas's; H. Goldfarb, Univ. Coll.; M. S. Good, Oxford and St. George's; W. E. F. Gough, Camb. and Leeds; J. Grocott, Guy's; S. J. Hadfield, St. Bart.'s; J. G. Hailwood, Liverpool; R. V. Harris, St. Bart.'s; V. E. L. Hart, London; K. J. Harvey, St. Bart.'s; J. D. Hay, Camb. and Liverpool; Dorothy J. Healey, Royal Free; A. A. Heathcote, Camb. and St. Bart.'s; A. Hemming, Birmingham; S. Henderson, Liverpool; C. V. A. Henriques, King's Coll.; E. C. Herten-Greaven, Camb. and London; F. G. Hinks, Camb. and St. Thomas's; R. H. K. Hope, Univ. Coll.; Doris I. Howell, Cardiff and Charing Cross; E. T. Hudson, Charing Cross; J. Hughes, Coventry and Warwickshire Hosp.; W. R. Hunter, Liverpool; D. A. J. Hunwick, Bristol; H. G. Hutton, Camb. and London; H. V. D'A. Iles, Guy's; Margaret H. James, Univ. Coll.; H. G. John, Cardiff and Univ. Coll.; Elsie E. Johnson, Royal Free; W. A. Johnson, St. Mary's; G. F. Jones, Cardiff and St. Mary's; O. G. Jones, Cardiff; V. D. Jones, Univ. Coll.; C. W. C. Karran, Camb. and St. Thomas's; F. W. H. Kent, King's Coll.; E. W. Kinsey, Cardiff and London; Madeline E. E. Knowlson, Westminster; C. E. Langley, London; A. G. Leigh, Liverpool; F. X. Letellier, Univ. Coll.; R. I. Lewis, Cardiff and London; Louisa A. Loder, King's Coll.; M. J. McCormack, London; D. B. McGavin, Camb. and St. Bart.'s; L. G. Mackenzie, Guy's; J. D. P. Macpherson, St. Thomas's; J. N. Majumdar, Calcutta and Middx.; T. O. Mason, St. Bart.'s; W. H. Mason, Middx.; G. J. H. Maud, Camb. and Univ. Coll.; J. T. Mendoza, Manchester; K. S. Menon, King's Coll.; F. C. Moll, Westminster; Mildred A. Morgan, Cardiff; G. T. L. F. Morris, Birmingham; G. K. Mulki, Bombay and Middx.; C. R. Naidu, Bombay and St. Bart.'s; S. D. J. Nand, Punjab and Manch.; Eileen A. Neilson, Univ. Coll.; W. F. Nicholson, Camb. and Manchester; F. A. Nicolai, Guy's; F. J. O'Dowd, Birmingham; W. M. Oxley, St. Bart.'s; Emma D. N. Part, Birmingham; H. S. Pasmore, Univ. Coll.; E. Pereira, St. George's; R. C. Percival, Sydney and London; R. R. Prytherch, Camb. and King's Coll.; G. Qvist, Univ. Coll.; A. M. Rackow, King's Coll.; C. Raman, Madras and London; Winifred H. Redmond, King's Coll.; R. S. Richmond, Camb. and St. Mary's; G. C. D. Roberts, Camb. and St. Thomas's; I. G. Robin, Camb. and Guy's; Marjorie C. A. Robson, Camb. and Birmingham; Christine M. Rooke, Univ. Coll.; J. A. Ross, Camb. and Liverpool; Margaret H. Scott, Royal Free; T. Seager, Liverpool; S. K. Sen, Camb. and St. Bart.'s; A. L. Secchi, St. Thomas's; A. Shatz, Cardiff; Freni M. Shaw, Royal Free; T. W. Smailes, Camb. and Leeds; J. A. Squire, St. Bart.'s; W. G. Stanford, Guy's; W. P. Stevens, Birmingham; L. J. Stoll, Guy's; J. N. Strauss, Manchester; V. A. J. Swain, St. Bart.'s; Mary G. Tate, Royal Free; D. M. E. Thomas, Cardiff and St. Bart.'s; H. B. Thomas, Camb. and St. Thomas's; R. W. H. Thomas, St. Mary's; J. R. Vaid, Lahore and St. Bart.'s; J. A. Vermylen, Univ. Coll.; E. O. Walker, Camb. and Bristol; M. L. Walt, Cape and Guy's; R. A. L. Wenger, Camb. and St. Bart.'s; C. J. G. White, Camb. and Middx.; J. L. Wightman, Camb. and Leeds; M. R. P. Williams, Cardiff; V. H. Wilson, Camb. and St. George's; J. C. Winteler, King's Coll.; Elma Wolmarans, Royal Free; and R. M. Yeo, Camb. and St. Thomas's.

Diplomas in special subjects were granted jointly with the Royal College of Surgeons to the candidates whose names appeared on p. 218 of our issue of July 22nd.

The College will be closed for cleaning from Thursday, August 3rd, to Saturday, Sept. 16th, both days inclusive.

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—E. V. Bevan and R. F. Fleming, St. Mary's Hosp.; T. von Haebler, Royal Free Hosp.; L. R. Jain, Univ. of Birmingham; J. E. Morrish, St. Mary's Hosp.; H. Owen, Univ. of Oxf. and St. Mary's Hosp.; W. C. M. Scott, Univ. of Toronto; and F. H. Williams, Univ. of Sheffield.

Medicine.—J. L. Cope, Univ. of Cambridge and Westminster Hosp.; J. B. Frumin, Guy's Hosp.; L. I. F. Kerridge and W. C. M. Scott, Univ. of Toronto.

Forensic Medicine.—N. C. Lendon, Univ. of Cambridge and St. Mary's Hosp.; H. N. Levitt and T. Morgan, Guy's Hosp.; W. C. M. Scott, Univ. of Toronto; D. A. Smith, Univ. of Cambridge and St. Mary's Hosp.; and H. B. Thornton, Guy's Hosp.

Midwifery.—A. C. E. Cole and R. F. Fleming, St. Mary's Hosp.; J. Lipschitz, Westminster Hosp.; B. S. Minden, St. George's Hosp.; W. C. M. Scott, Univ. of Toronto; A. L. L. Silver, London Hosp.; and G. L. R. Tapsall, St. Mary's Hosp.

The following candidates, having completed the final examination, are granted the diploma of the society, entitling them to practise medicine, surgery, and midwifery: E. V. Bevan, J. L. Cope, J. B. Frumin, L. R. Jain, J. E. Morrish, H. Owen, W. C. M. Scott, and F. H. Williams.

University of London

At recent examinations the following candidates were successful:—

M.D.

Branch I. (Medicine).—K. V. Edwards, Univ. Coll. Cardiff and Univ. Coll. Hosp.; P. R. Graves, St. Thomas's Hosp.; •A. S. Hoseason, St. George's Hosp.; A. T. Lock Kingdon, Univ. Coll. Hosp.; Moyra I. Macnaughton-Jones, London (R.F.H.) School of Medicine for Women; J. H. G. Mason, Middlesex Hosp.; Joseph Mindline, Westminster Hosp.; P. McG. Moffat, Guy's Hosp.; G. H. Newns, King's Coll. Hosp.; A. P. M. Page, St. Bart.'s Hosp.; H. E. Reburn, King's Coll. Hosp.; J. H. O; Roberts, St. Bart.'s Hosp.; T. S. Rodgers, Westminster Hosp.; E. G. Thomas, Univ. Coll. Cardiff and Univ. Coll. Hosp.; F. H. W. Tozer, London Hosp.; J. R. Tree, Middlesex Hosp.; J. H. Watkin, St. Bart.'s Hosp.; and †G. P. B. Whitwell, Guy's Hosp.

Branch II. (Pathology).—H. A. Harris, Univ. Coll. Hosp.

Branch III. (Psychological Medicine).—C. E. Allen, Guy's Hosp.; N. G. Harris, St. Thomas's Hosp.; and J. R. A. Madgwick, London Hosp.

Branch IV. (Midwifery and Diseases of Women).—Gwendoline E. Austin, King's Coll. Hosp.; Rosa E. Chamings, London (R.F.H.) School of Medicine for Women; L. G. Housden, Guy's Hosp.; Beatrice M. Joly, London (R.F.H.) School of Medicine for Women; Eileen M. King, Univ. Coll. Hosp.; and Margaret I. Neal, London Hosp.

Branch VI. (Tropical Medicine).—E. M. Wijerama, London School of Hygiene and Tropical Medicine and Univ. Coll. Hosp.

• University Medal.
† Awarded a Mark of Distinction.

Paddington Medical Society

On Tuesday, August 15th, at 9 P.M., at the Great Western Royal Hotel, Paddington, Mr. R. Y. Paton will give a lecture on common disabilities of the foot and their treatment.

Royal Medico-Psychological Association

Gaskell prize and medal.—In our issue of July 15th (p. 145) it was stated that this prize and medal had been awarded to Dr. Desmond Curran, and that Dr. L. Minski had received an additional medal. We are informed that the essays of Dr. Curran and Dr. Minski were considered equal in merit; a gold medal was awarded to each of them, and the prize was equally divided.

Post-graduate Courses in Berlin

A course on the practical results of modern investigation of internal disorders will be held at various centres in Berlin from Oct. 2nd to 14th. The lecturers will include Prof. Bergmann (Charité), Prof. Schilling (Moabit), Prof. Munk (Martin Luther), and Prof. Cobet (the sanatorium at Beelitz). Detailed programmes of this and other courses may be had from the Geschäftsstelle der Dozentenvereinigung für ärztliche Fortbildung, Kaiserin Friedrich-Haus, Robert Koch-Platz 7, Berlin, N.W.7.

British College of Obstetricians and Gynæcologists

The quarterly meeting of the council was held on July 24th, with Dr. J. S. Fairbairn, the president, in the chair. The following officers were re-elected: President, Dr. Fairbairn. Vice-presidents, Dr. H. Russell Andrews and Sir Ewen Maclean. Hon. treasurer, Mr. Eardley Holland. Hon. secretary, Prof. W. Fletcher Shaw. Hon. appeal treasurer, Mr. Comyns Berkeley. Hon. librarian, Mr. A. E. Giles. Hon. assistant librarian, Mr. Frederick Roques.

Dr. W. F. T. Haultain (Edinburgh) was promoted to the Fellowship of the College and the following were elected to the Membership:—

Alexander Allan (Manchester), Lieut.-Colonel H. C. Buckley (India), John Barnard Blaikley (London), Harold Carter (London), Robert Leslie Dodds (London), John Douglas Flew (London), Tom Ivor Hughes (London), John Stewart Henry (Montreal), Peter Joseph Kearns (Montreal), Major G. H. Mahony (India), Patricia Massey (South Africa), William George Mackay (Glasgow), Douglas A. Mitchell (Bath), Margaret Mary Nolan (India), Newell W. Philpott (Montreal), Edwin Moody Robertson (Edinburgh), Walter Salisbury (Northampton), Roy McGregor Saunders (London), Walter Netley Searle (New Zealand), George Drury Shaw (South Africa), Donald R. L. Stevenson (New Zealand), Henry J. Thomson (Bellshill, Lanark), Beatrice Turner (London), John Ross Vant (Canada), Blake H. Watson (Canada).

The president formally admitted to the Membership Dr. Keith Duff (London) and Dr. William Smith O'Loughlin (Romford).

Sir Kedarnath Das was elected chairman of the Indian reference committee in the place of Lieut.-Col. V. B. Green-Armytage, who has returned to England.

London School of Hygiene and Tropical Medicine

The nine months' course of study for the diploma in public health begins at this school on Oct. 2nd. The Fishmongers' Company studentship, entitling the holder to free tuition for the whole course, is open for competition among European students who hold a medical qualification registrable with the General Medical Council. The subject of the examination, which will be held at the school on Sept. 20th–21st, is Hygiene, within the scope of the London third M.B. Applications must be received by the secretary of the school (Keppel-street, W.C. 1) by Sept. 16th.

Instruction for D.P.H.

The medical officer of health to the London County Council announces that a three months' course of lectures and demonstrations on clinical practice and in hospital administration will be given at the North-Western Hospital, Lawn-road, Hampstead, N.W., by Dr. Alexander Joe, the medical superintendent, on Mondays and Wednesdays at 9.30 A.M. and alternate Saturdays at a time to be arranged, beginning on Monday, Oct. 2nd. A similar course will be given at the Brook Hospital, Shooter's-hill, Woolwich, S.E., by Mr. J. B. Byles, the medical superintendent, the dates and times being the same. Applications should be made to the medical officer, public health department (special hospitals), the County Hall, London, S.E.1.

Institute of Medical Psychology

This institute (formerly the Tavistock Clinic) has issued the programme of a post-graduate course in psychotherapeutic theory and method. The main course, covering a year's work, will begin on Oct. 2nd, and is arranged for two groups; those who can give only three hours twice a week, and those who can give a minimum of 12 hours in the week. There will be a five weeks' introductory course of lectures which may be taken separately by medical practitioners. The systematic lectures throughout the year (without discussion or other work) are also open to post-graduates who have not entered for the full course. Particulars of these and other arrangements may be had from the hon. lecture secretary at the institute, 6, Torrington-place, London, W.C. 1.

Chartered Society of Massage and Medical Gymnastics

This society, of which Lord Moynihan is president, is holding its annual congress from Sept. 18th to 23rd, at University College, Gower-street, London. Those giving lectures or demonstrations will include Dr. J. B. Mennell, Dr. W. L. Watt, Dr. J. F. Wilkinson, Dr. Justina Wilson, Dr. W. M. Crofton, Sir Harold Gillies, Mr. R. C. Elmslie, Mr. George Perkins, Dr. Alice Hutchison, Dr. Vincent Coates, Mr. Norman Dott, Dr. Rupert Waterhouse, Dr. Isaac Jones, Dr. W. J. Turrell, Dr. Wanless Dickson, and Dr. Geoffrey Holmes. Dr. E. D. Adrian, F.R.S., will give the founders' lecture on Muscle Tone. The meetings are open to medical practitioners, and cards of admission, together with vouchers for reduced railway fares if required, may be had from the congress secretary at the society's offices in Tavistock House (North), Tavistock-square, London, W.C. 1.

The Scottish Health Services

The first meeting of the committee which has been appointed to inquire into the policy and organisation of the Scottish health services was held in Edinburgh on July 28th with Sir John Dove-Wilson, K.C., in the chair. Mr. John Jeffrey, Secretary of the Department of Health, who represented the Secretary of State, pointed out that the development of the services had been more or less haphazard, and it was impossible as component parts of a common structure designed to achieve a central purpose. The stocktaking which the committee was about to embark on had become urgent because of doubts whether in fact they were developing on sound lines and whether they were doing their jobs in the most effective and economical manner. Some of the services appeared to be lagging behind the rapid growth of knowledge of prevention and treatment of disease—more especially prevention. A number of difficult administrative problems were also emerging—e.g., the relation of the general practitioner to the statutory health services, and the future of poor-law medical service—and these would not be determined until the aims and lines of development were clear. The terms of reference are to "review the existing health services in Scotland in the light of modern conditions and knowledge, and to make recommendations on any change in policy and organisation that may be considered necessary for the promotion of efficiency and economy." After a general discussion, the committee adjourned until October.

Metropolitan Hospital Sunday Fund

This year the fund amounts to £64,200, a decrease of about £2000, and the committee of distribution last week decided to pay out £64,000; the number of applicants was 249. The principal grants were: London Hospital, £5230; St. Thomas's, £2700; Middlesex and Convalescent Home, £2550; University College, £2400; Hampstead and North-West London, £2340; Royal Free, £2100; St. George's, £2000; Royal Northern, £1920; King's College, Seamen's, and St. Mary's, £1560 each; Westminster, £1300; Charing Cross, £1260; West London, £1250; Brompton, £1040; Queen Mary's, West Ham, £1020; and St. Bartholomew's, £1000.

Medicine and Athletics

The Italian Federation of Doctors versed in the Treatment of Athletes is holding an international conference at Turin from Sept. 6th to 9th. Physical and athletic instructors as well as medical men are invited to take part, and communications may be made on any subject related to medical aspects of sport. Contributions should be sent in advance, together with brief summaries in French or Italian which will be read to the congress and afterwards distributed. There will be no fee for participation, and reduced fares will be granted on the Italian railways. Particulars may be had from the Extraordinary Commissioner, Prof. Ugo Cassinis, via dello Stadio 14, Rome.

Appointments

BOYD, MARJORIE R. E., M.B., B.Ch. Dub., has been appointed Resident Medical Officer, Horton General Hospital, Banbury.

HARRISON, L. F. A., L.R.C.P. Lond., M.R.C.S., Surgeon under the Factory and Workshop Acts for Farningham, Kent.

MIDDLETON, J. C., M.B., Ch.B. Glasg., Medical Referee under the Workmen's Compensation Act, for cases of Industrial Disease arising in the Sheriff Courts of Ayr, Kilmarnock, Glasgow, &c.

Births, Marriages, and Deaths

BIRTHS

CHITNIS.—On July 27th, at White-Cross House, Birmingham, the wife of C. N. Chitnis, M.R.C.S., L.R.C.P., of a daughter.

COPEMAN.—On July 27th, at Welbeck-street, W., the wife of Dr. William S. C. Copeman, of a daughter.

LAWSON.—On July 28th, at Westminster-road, Leicester, the wife of Dr. D. Forbes Lawson, of a son.

MCCURRICH.—On July 28th, at Devonshire-place, W., the wife of H. J. McCurrich, M.S., F.R.C.S., of Hove, Sussex, of a son.

DEATHS

CRESSY.—On July 28th, at Carshalton, Arthur Zell Claydon Cressy, M.R.C.S., of Maldon-road, Wallington.

GREEN.—At the Derbyshire Royal Infirmary, on July 30th, 1933, Edwin Collier Green, O.B.E., M.R.C.S., L.R.C.P. (of 27, Friar Gate, Derby), aged 75 years.

MAIDLOW.—On July 29th, after a brief illness, William Harvey Maidlow, M.D., F.R.C.S., of Bay House, Ilminster, Somerset, aged 65 years.

SMITH.—On July 26th, in a nursing-home in London, Colonel Frederick Smith, C.B., C.M.G., D.S.O., late R.A.M.C.

TOYE.—On July 29th, 1933, at Stanhope, Bideford, Devon, Mary Ellen, wife of E. J. Toye, M.D. Lond., F.R.C.S.

WATERS.—On July 25th, at Lorrenden Lodge, Beddington-lane, near Croydon, Lieut.-Colonel George Waters, late I.M.S., in his 88th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

MEDICAL BENEVOLENCE IN YORKSHIRE

THE Medical Charitable Society for the West Riding of the County of York, which was founded in 1828, has just held its 105th annual meeting at Doncaster under the chairmanship of Dr. Glover. The society now has 1182 members. Its objects are to help (*a*) any member who is disabled by illness or accident or age, and who has not adequate means of support; (*b*) the widow or children of a deceased member who may at any time require assistance; (*c*) the mother of any member, being a widow (or the sister, being single or a widow), who had acted as his housekeeper for a period of not less than five years immediately preceding his death, and who may at any time require assistance; and (*d*) in the education of the children of members disabled by illness, accident or age or of deceased members, who at any time may require assistance for this purpose.

The society is definitely a charity, and no member can claim any right in respect of his subscription nor can those whom he has left do so; but what is much better, they can with confidence feel that their requests for assistance will come before a sympathetic body of the members of the profession who are anxious to do what can properly be done in each case. It will be noted that in the framing of the rules it has not been forgotten that the children of deceased members may have been comfortably left off, and yet that after many years they may fall upon evil times. In illustration of this, a grant of £50 was this year made to the son of one of the members who died no less than 50 years ago. Last year a note was added to the clause dealing with the education of children which enables the society to make a grant to Epsom College to help the fund devoted to establishment of foundation scholarships. This was done as a direct result of the alteration in the rules of the college whereby the selection of suitable candidates for these scholarships will in future lie with a special committee consisting of representatives of the council along with an equal number of governors who are not members of that body. Two grants of £50 have already been made to the funds of the College under this rule, and it is the hope of those who suggested the alteration in the rule that for many years this or a larger sum may be voted at the annual meetings.

Thanks to the care which has always been exercised in the management of the finances of the society, it has always been found possible to meet all reasonable appeals for help and yet to increase its investments. By June, 1933, no less a sum than £89,174 had been given in grants, and at the recent meeting the amount voted for the year now current was £2092.

Though the membership of the society steadily increases (for in 1921 it was 862 and now, as has been mentioned, it amounts to 1182), those who are responsible for the working of the society, and who are best acquainted with its merits, feel that the numbers should be much greater than they are. Particulars of the work of the society may be obtained from Dr. Wardrop Griffith, of Leeds.

HEALTH AND STILL MORE HEALTH

Colonel P. S. Lelean's address as promotor at the Edinburgh University medical graduation on July 19th was divided into retrospect and prospect. Examining his hearers' future he pictured them looking down on a stream of human life, which perhaps they might succeed in diverting from its course. He pleaded for eugenics at the beginning and euthanasia at the end of life, and urged the paramount necessity for health throughout the intervening period.

"Essential education the child must obviously have, but no less obvious, and more imperative, is its need for sun and freedom. How much of what is taught is really essential? When the school curriculum only allots 5 per cent. of its time to instruction in the citizen's first duty—being fit—there is evident need for clearance of much educational flotsam to clear the way for the universal teaching of physiology—the knowledge of how to live. No rattling of dry bones in the youngsters' ears can ever compensate their loss of sun and breeze, of adventure and quietude. When you—as family doctor—are consulted at each term's end as to the children's 'nervous irritability' (alias gross overwork), then is your chance to put an honest foot down hard upon the tenderest corn adjacent—you know whose! Why not a six-hour day, and no night-work, for school-children as for hefty miners and mature industrialists; why not submission of school curricula for visa by the Ministry of Health, pending the education in physiology of all educationalists?"

Who will provide the recreation essential for adolescents when their industrial day's work is done, Dr. Lelean asked. At present only one of four of them belongs to any organisation attempting to provide outlets for their spare-time energies; although modern youth asks nothing from age but opportunity—something to do worth doing, and the happiness that comes from doing it.

At 40 there are two classes—the quick, and the ambulatory, who describe themselves apologetically as middle-aged.

"But middle age is not a state: if anything, it is a preventable disease. Its prodromal sign is loss of football boots at 20; at 30 the patient never runs save for 'bus or for stile; at 40 he is a played-out neurotic; and at 50 he remarks hypochondriacally, and perhaps truly, that he were better dead. If given the exercise it wanted, that gallant heart of his would have gone all out for nine hours a day to the end, and have kept the blight of middle-age from even nonagenarian youth."

EUGENICS IN WONDERLAND

THE term "eugenic colony" recalls the visions of the future which afflict Mr. H. G. Wells: hygiene, health garments, and an insufferable air of physical and spiritual superiority among the inhabitants. We have Mr. C. Wicksteed Armstrong's word for it,[1] however, that things would not be as bad as that. He proposes that a eugenic colony should be founded in South America, upon the Santa Catharina Plateau, and if this paradise is all he claims for it he is likely to be the founder of an overcrowded slum area, because of the press of applicants. The climate is temperate and the plateau is still clothed in virgin forest, consisting of pine trees, cedars, walnut, cinnamon, and mahogany. Rainfall is abundant. There are no endemic diseases, and the settlers—of whom there are at present only eight to the square mile—are sturdy and well fed. They spend their first year or two, on arrival, in cutting down trees, and selling the hardwood to sawmills at a rate which more than repays the cost of the land. Then they plant maize and potatoes, and later fruit trees. The ground is so fertile that nearly all fruits of sub-tropical and temperate countries do well, and the settler is able to augment his diet with grapes, apples, pears, peaches, apricots, plums, mangoes, pineapples, oranges, lemons, and—if he happens to have founded his homestead on the lowlands near the coast and not on the highlands—bananas. Land is cheap; 62½ acres can be bought for anything from £25 to £100. Nor are the neighbours likely to prove objectionable in this remarkable place. Most of them are German, of a kindly Anglo-Saxon type, who welcome the thought of English immigrants; the remaining settlers are Italian. Mr. Armstrong wants to import families of the best English farming stock, free from hereditary defect and in robust health, who will undertake to have as many children as nature and their means permit. After farmers he would favour carpenters, electricians, builders, mechanics, school-masters, and musicians. Doctors are not

[1] Eugenics Review, July, 1933, p. 91.

mentioned, presumably because their services will not be required.

Mr. Armstrong believes that when civilisation has been wrecked in the next war, eugenic colonies, founded in our time, may well become the refuge of civilisation and culture. This prophecy recalls the fate of the cities of the plain, and those of us who are willing to be warned in time can offer to support his proposal.

MASSAGE AND MEDICAL GYMNASTICS

Miss Goodall-Copestake's text-book[1] which has been further enlarged and improved in a new edition, will be of interest to doctors as well as to massage and gymnastic students. Extra chapters on kinesiology and muscle re-education have been included, at the expense of the earlier section of war injuries. Some old fallacies of technique remain uncorrected, such as the insistence of hip-rolling in one direction only. A reversal of direction within the same range of movement can surely not be considered "injurious." The wrist-grip for pronation and supination of the forearm (shown by plate) interferes with the freedom of the movement. The wrist can be steadied by the forefinger of the operator's right hand. The section on the treatment of scoliosis is too general to be of real help, and the description of lordosis is very slight. In many of the pathological conditions more stress is laid upon medical rather than remedial treatment, and though some knowledge of this may be of value to the massage student, space could be better used in stimulating her interest in the possibilities of her own technique. But these minor criticisms apart, the book is a welcome and useful contribution to the literature of massage and medical gymnastics.

A DISCLAIMER.—Mr. Norman Haire writes to disclaim responsibility for a description of himself as "the eminent gynæcologist," which appeared in an advertisement of a book to which Mr. Haire contributed a preface. He has instructed the publishers to delete the offending description of himself from future advertisements.

THE BED-BUG.—Fleet-surgeon W. E. Home writes in reference to our annotation of July 8th (p. 88): "An experienced pharmacist in Canada, who owned houses he had built and rented, told me once of his trials with tenants who had introduced bugs, against which infestation he had used many methods without complete success until he plastered up all cracks with ung. hydrarg., after which he heard no more complaints."

ROAD ACCIDENTS IN LONDON.—In the course of a letter sent on behalf of the Pedestrians' Association Mr. T. C. Foley writes: "It is officially announced that during the first six months of 1933 there were 73 more people killed and 1877 more injured in the metropolitan police area than during the corresponding period of 1932. This statement must cause the gravest public concern, coming as it does two and a half years after the introduction of the Road Traffic Act, the purpose of which was to reduce accidents. That Act sought to reduce accidents by abolishing the speed limit and by increasing the penalties for dangerous driving. But that the Act has failed in its purpose must now be obvious to all. Observations show that the speed at which cars are driven has increased by 10 or 15 miles an hour in the last three years, demanding a much greater degree of skill on the part of the driver (for which the Act failed to make any provision), and a much higher standard of judgment in crossing roads on the part of the pedestrian. . . . Let the Government accept the advice already tendered to the Royal Commission on Transport by the Commissioner of Police for the Metropolis for a speed limit for the metropolitan area, sternly enforced. Every unprejudiced, disinterested observer, whether motorist or pedestrian, knows that excessive speed is the main cause of these accidents."

[1] **Theory and Practice of Massage and Medical Gymnastics. Fifth edition. By B. M. Goodall-Copestake. London: H. K. Lewis and Co., Ltd. 1933. Pp. 332. 12s. 6d.**

Vacancies

For further information refer to the advertisement columns

Aberdeen, Kepplestone Nursing Home.—Radiologist for X Ray Dept.

Aberdeen Royal Hospital for Sick Children.—Hon. Asst. Radiologist.

Bagdad, Royal College of Medicine.—Six Professorships.

Bath, Royal United Hospital.—H.P. At rate of £175.

Belfast, Queen's University.—John Dunville Research Fellowship in Experimental Pathology. £350–£500.

Birkenhead Infirmary.—Res. M.O.'s. Each £300.

Blackburn Royal Infirmary.—Fourth H.S. £150.

Bolingbroke Hospital, Wandsworth Common, S.W.—H.P. At rate of £120.

Bootle General Hospital.—H.P., 2 H.S.'s, and Cas. O. Each at rate of £150.

Bradford, Municipal General Hospital, St. Luke's.—H.P.'s and H.S.'s. Each at rate of £150.

Brentwood, Essex, High Wood Hospital.—H.P. At rate of £80.

Bristol, Ham Green Hospital and Sanatorium.—Jun. Asst. Res. M.O. £250.

Buxton, Devonshire Hospital.—Asst. H.P. At rate of £150.

Cardiff, King Edward VII. Welsh National Memorial Association.—Three half-time Asst. Tuber. O.'s. Each at rate of £250. Also Two Jun. Asst. Res. M.O.'s for N. Wales Sanatorium and Glan Ely Tuberculosis Hospital. Each £250.

Cardiff Royal Infirmary.—Hon. Asst. Physician.

Colonial Medical Service.—M.O.'s in the West African Medical Staff. Each £660.

Coventry and Warwickshire Hospital.—H.S. £125.

Derby, Derbyshire C.C.—Asst. Maternity and Child Welfare M.O. £600.

Doncaster Royal Infirmary.—H.P. At rate of £175.

Durham County Mental Hospital.—Asst. M.O. £350.

Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.

Exeter City.—Deputy M.O.H. and Asst. Tuber. O. £600.

Golden-square Throat, Nose and Ear Hospital, W.—Hon. Anæsthetist, Hon Registrar, and Hon Asst. Surgeon.

Great Yarmouth General Hospital.—H.S. £140.

Greenwich Metropolitan Borough.—Tuber. O. for Council's Dispensary and Asst. M.O.H. £750.

Hastings, Royal East Sussex Hospital.—Hon. Asst. Surg.

Ilford, King George Hospital.—Asst. Ophth. Surgeon. Also H.S. £100.

Ipswich, East Suffolk and Ipswich Hospital.—H.S. £120.

Liverpool Open-air Hospital for Children, Leasowe.—Jun. Res. M.O. £200.

Liverpool, Walton Hospital.—Pathologist. £750.

Maidstone, Kent County Ophthalmic and Aural Hospital.—Ophth. H.S. At rate of £200.

Manchester Babies Hospital, Burnage-lane, Levenshulme.—Hon. Asst. Physician.

Manchester Northern Hospital for Women and Children, Park-place.—Sen. and Jun. H.S.'s. £130 and £100 respectively.

Manchester, St. Mary's Hospitals.—H.S. for Whitworth Park Hospital. At rate of £50.

Nottingham General Hospital.—H.S. for Ear, Nose and Throat Dept. At rate of £150.

Plymouth City Hospital.—Res. M.O. £350.

Princess Beatrice Hospital, Richmond-road, Earl's-court, S.W.—Sen. Res. M.O. £150.

Queen's Hospital for Children, Hackney-road, E.—H.S. and Cas. O. Each at rate of £100.

Richmond, Surrey, Royal Hospital.—Jun. H.S. At rate of £100.

Royal Eye Hospital, St. George's-circus, Southwark, S.E.—H.S. and Asst. H.S. At rate of £150 and £100 respectively. Also Hon. Phys.

Royal Northern Hospital, Holloway, N.—Obstet. H.S. At rate of £70.

St. Bartholomew's Hospital, E.C.—Dental H.S. £80.

Salisbury, General Infirmary.—H.P. At rate of £150.

Shrewsbury, Royal Salop Infirmary.—Res. H.P. At rate of £160.

Southampton Free Eye Hospital.—Locum Tenens Ophth. H.S. 6 gns. a week.

South Shields, Ingham Infirmary.—Sen. and Jun. H.S. £200 and £150 respectively.

Sutton, Sutton and Cheam Hospital.—Res. M.O. At rate of £150.

Tunbridge Wells and Counties General Hospital.—H.S. £160.

Virginia Water, Surrey, Hollaway Sanatorium.—Jun. Asst. M.O. £350.

Wakefield, Middleton-in-Wharfedale Sanatorium.—Jun. Res. M.O. £250.

Wakefield, West Riding of Yorkshire Mental Hospitals Board.—Three Med. Supts. £1000–£1400.

Warrington County Mental Hospital, Winwick.—Asst. M.O. £500.

Weir Hospital, Grove-road, Balham, S.W.—Jun. Res. M.O. £150

Westminster Hospital, Broad Sanctuary, S.W.—Wander Scholarship in Diseases of Children. £250.

Weston-super-Mare, General Hospital.—Res. M.O. £150.

Wigan Royal Infirmary.—H.S. At rate of £150.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Amersham, Buckingham.

The Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the Liverpool County Court District. Applications from surgeons should reach the Private Secretary, Home Office, Whitehall, London, not later than August 19th.